1 Cairo Governorate — St. Joseph School

Answer the following questions :

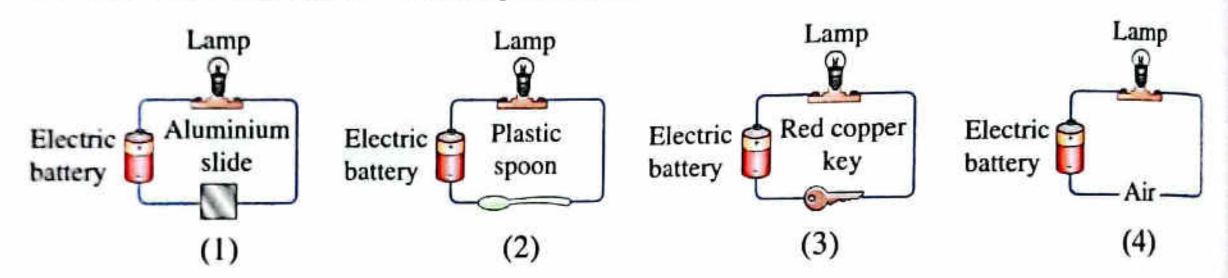
Question 1

A Give reasons for :

1. Iron rods not copper rods are used in building concrete houses.
2. The symbol of sodium is (Na) not (So) as it is expected.
3. When the ball of the pendulum reaches the maximum height, the kinetic energy equals zero.
4. Living organisms must be classified.

B Complete :

1. The second energy level "L" is saturated with .... electrons.
2. In the following figure : The lamp is illuminated in .... , ... cases only.



3. Oven is a source of .... energy.
4. .... is a modification in the behaviour of a living organism at specific time of the day or year.

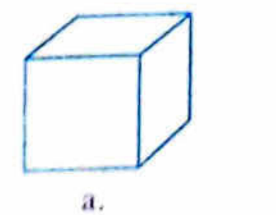
C What happens when ... ?

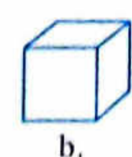
1. Rubbing your hands together.
2. Opening of a perfume bottle in a closed room.

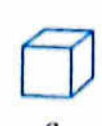
Question 2

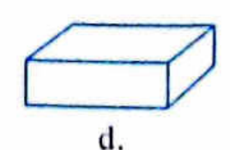
A Choose the correct answer :

1. The following cubes have he same mass. Which one has the highest density ? ....


a.


b.


c.


d.

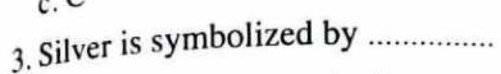
2. In the following figure :

At which point the potential energy of the ball = zero ? ....

a. A b. B

c. C d. A & C

A
B
20 m.
C
Earth's surface



3. Silver is symbolized by ....

a. Hg b. Ag c. Cu d. Au

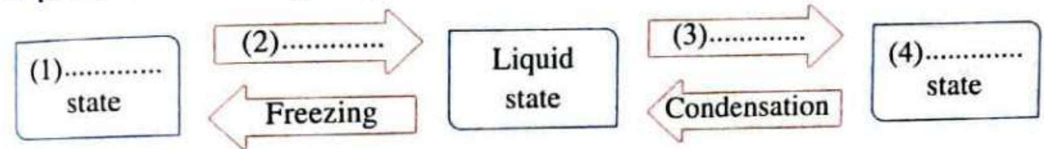
4. In the solar cells, the solar energy changes into .... energy.

a. kinetic b. light c. electric d. sound

B Give an example of each of the following :

1. An animal of big size.
2. A plant carries small-sized leaves.

C Complete the following diagram :



Question 3

A Choose the odd word or symbol out, then write the scientific term of the other :

1. $_{2}He$ – $_{3}Li$ – $_{12}Mg$ – $_{19}K$.
2. Jellyfish – Octopus – Earthworm – Bird.
3. Acidic solutions – Sugary solutions – Salt solutions – Alkaline solutions.
4. Ice – Wood – A piece of Iron – Petroleum.

B Show by drawing the electronic configuration for each of the following atoms :

1. $_{10}Ne$ 2. $_{17}Cl$ 3. $_{20}Ca$ 4. $_{1}H$

C What is meant by ... ?

1. The density of water is 1gm/cm^3.
2. The boiling point of water = 100°C.
3. The kinetic energy of an object = 40 joule.

Question 4

A Write the scientific term :

1. Anything that has a mass and a volume.
2. It is the ability to do work or to make a change.
3. They are living organisms that can't be seen by the naked eye, but they spread everywhere around us.

4. It is the smallest part of matter which can exist freely, and it has the properties of matter.
5. The sum of the potential and kinetic energies of an object.

B Write the symbol of the following elements :

1. a. Nitrogen. b. Argon. c. Iron.
2. If the nucleus of an oxygen atom contains 8 protons and 8 neutrons, find the atomic number and the mass number of oxygen and how the symbol of oxygen element is written.

C Calculate :

The density of iron cube, its mass is 78 gm. and its volume is 10 cm^3.

2 Cairo Governorate — Leaders Language Schools

Answer the following questions :

Question 1

A Complete the following statements :

1. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.
2. .... and .... plants reproduce by spores.
3. The liquid state of matter has .... shape and .... volume.
4. The mass number is the sum of .... number and .... number.

B Put (✓) or (✗), and correct the wrong ones :

1. Heat is transferred in solids by convection and radiation. ( )
2. The positive pole in the simple electric cell is copper. ( )
3. Two iron pieces with equal masses will have different volumes. ( )
4. Ammonia molecule consists of 3 atoms of 2 different elements. ( )

C Problem :

An object moves with speed 30 m/s, calculate its kinetic energy knowing that its mass is 500 gm.

Question 2

A Choose the correct answer :

1. All the following solutions conduct electricity except .... solution.
   a. salty b. acidic c. alkaline d. sugary
2. In the car engine, the chemical energy changes into .... energy.
   a. heat b. light c. mechanical d. electric

3. Heat is transferred through space by ....

a. convection. b. conduction.

c. radiation. d. conduction and convection.

4. Frogs hide themselves is mud during winter, it is called ....

a. aestivation. b. hibernation. c. camouflage. d. migration.

B Write the scientific term :

1. The plants which feed on insects.
2. A group of animals that have 1 pair of incisors in each jaw.
3. A group of gases their molecules are monoatomic molecules.
4. The change of matter from liquid state to gaseous state by heating.

C Compare between :

Electrons and protons. (concerning : their charge – their position in the atom).

Question 3

A Give reasons for :

1. The atom is electrically neutral.
2. When you leave the perfume bottle opened, you smell it all over the room.
3. Wind energy is preferable than fuel energy.
4. In monkeys, bones of the front limbs and fingers are elongated.

B Cross the odd word out :

1. Conduction – Convection – Friction – Radiation.
2. Electric fan – Electric heater – Electric bell – Petrol stove.
3. Wax – Aluminium – Butter – Ice.
4. Sodium – Ammonia – Water – Hydrogen chloride.

C What is the function of ... ?

1. The long beak in heron.
2. The palm legs in the geese.

Question 4

A What happens when ... ?

1. Using water in extinguishing of petrol fires.
2. An electron gains a quantum of energy.
3. The chameleon can't change its color.
4. The ants have 4 pairs of jointed legs.

B Give one example of each of the following :

1. Huge tree.
2. Big size animal.
3. Gymnosperm plant.
4. Device uses solar energy.

C Draw the electronic configuration and show the type of :

1. $_{19}K$
2. $_{10}Ne$

3 Cairo Governorate — Mokattam Language International School

Answer the following questions :

Question 1

A Complete the following statements :

1. The number of incisors pairs in the upper jaw of jerboa is .... , while in the upper jaw of rabbit is ....
2. Mechanical energy of an object = ... energy + ... energy.
3. In the dynamo .... energy changes into .... energy.
4. Potential energy depends on .... and .... of the object.

B Give an example of each of the following :

1. An animal with internal body support.
2. A good conductor of heat and electricity.
3. A liquid element consists of one atom.

C What is meant by atomic number ... ?

Question 2

A Write the scientific term of each of the following :

1. Positive charges that are found in the nucleus of the atom.
2. Energy stored in the object due to the work done on it.
3. The ability of some living organisms to hide from their enemies.
4. A method of transferring heat through solids.
5. The temperature at which the substance changes from liquid to gaseous state.
6. The branch of biology that searches for similarities and differences among living organisms.

B What happens when ... ?

1. Rubbing your hands together.
2. Adding a drop of ink in water.
3. Wet iron nail is left in the air.

C When a piece of iron of mass 78 gm is put in a graduated cylinder containing 100 cm^3 of water, the reading of the cylinder becomes 110 cm^3. Calculate the density of iron.

Question 3

A Put (✓) or (✗) and correct the wrong ones :

1. Mass number is the number of neutrons. ( )
2. Heat is transferred through gases by convection only. ( )
3. Bean plant is considered from dicotyledon plants. ( )
4. The third energy level is saturated with 18 electrons. ( )
5. Flies have six legs. ( )
6. Sodium and potassium are inactive metals ( )

B Write the electronic configuration of the following elements :

1. $_{18}Ar$ 2. $_{7}N$ 3. $_{17}Cl$

C Give reasons for :

1. The heat of the Sun is transferred to the Earth by radiation.
2. The front teeth of hedgehog are extending outwards.

Question 4

A Choose the correct answer :

1. The smell property is a distinguishing factor between ....
   a. wood and plastic. b. silver and gold.
   c. vinegar and perfume. d. iron and copper.
2. .... is from teethless mammals.
   a. Armadillo b. Rabbit c. Rat d. Lion
3. Balloons of festivals are filled with .... gas.
   a. oxygen b. nitrogen c. carbon dioxide d. helium
4. From the examples of living organisms that undergo aestivation is ....
   a. desert snail. b. heron. c. hawk. d. quail.
5. In the simple electric cell, ... energy is converted into electric energy.
   a. mechanical b. chemical c. sound d. light
6. .... is a renewable source of energy.
   a. Coal b. Petrol c. Wind d. Natural gas
7. An object of mass 4 kg. is moving at speed of 3 m/sec., its kinetic energy = ...
   a. 16 joule. b. 64 joule. c. 32 joule. d. 18 joule.
8. Birds migration represents .... adaptation.
   a. functional b. structural c. behavioural d. anatomical

B **Mention the symbols of the following elements :**

1. Oxygen. 2. Copper. 3. Iron. 4. Hydrogen.

C **Compare between :**

1. Insects and arachnids (according to : the number of legs).
2. Solids and gases (according to the intermolecular forces).

4 Cairo Governorate — Al-Ola Language Schools

Answer the following questions :

Question 1

A **Choose the correct answer :**

1. The density of substance is a .... property.
   a. chemical b. physical c. biological d. magnetic
2. On adding 70 cm^3 of water to 30 cm^3 of alcohol, the volume of the mixture becomes .... cm^3.
   a. 60 b. 97 c. 100 d. 102
3. Chemical energy can be stored in ....
   a. car batteries. b. stretched spring.
   c. raising a load upwards. d. car lamp.
4. Pea plant belongs to .... plants.
   a. fern b. dicotyledon c. monocotyledon d. gymnosperm

B **Choose the odd word out, then write the scientific term of the others :**

1. Neon – Argon – Oxygen – Xenon.
2. Fluorine – Water – Bromine – Carbon.
3. Electric heater – Electric iron – Electric fan – Electric stove
4. Wheat – Pea – Corn – Bean – Pine.

C **Give a reason for :**

A piece of wood floats on water surface, while a piece of lead sinks in it.

Question 2

A **Put (✓) or (✗) :**

1. Each substance has a definite melting point. ( )
2. The motion of gaseous molecules is limited. ( )

3. All mammals walk on four limbs. ( )
4. Birds migration is an acquired behaviour. ( )

B Mention an example of each of the following :

1. Very active metal.
2. A solid substance which is soft at room temperature.
3. A plant carries large - sized leaves.
4. An edentate animal.

C What happens when ... ?

Dipping two different metals connected by a wire in an acidic solution.

Question 3

A Write the scientific term :

1. The simplest form of matter which can't be analyzed into simpler form.
2. The number of positive protons in the nucleus.
3. The product of multiplying the force by the displacement.
4. Plants that can't be distinguished into roots, stems and leaves.

B Complete the following :

1. Hydrogen molecule consists of .... atom(s), while argon molecule (inert gas) consists of .... atom(s)
2. .... and .... are from principles used in classifying plants.

C Compare between :

P.O.C	Angiosperms	Gymnosperms
1. Definition :	....	....
2. Example :	....	....

Question 4

A Choose from column (B) what suits in column (A) :

(A)	(B)
1. Helium	a. used in making jewels
2. Aluminium	b. used in making handles of screwdrivers.
3. Plastic	c. used in making heating coils.
4. Nickel chrome	d. used in making cooking pans.
	e. used in filling balloons during festivals.

B Write the symbols of the following elements :

1. Sodium. 2. Calcium. 3. Aluminium. 4. Chlorine.

C What is the function of each of the following :

1. The paddles of whales and dolphins.
2. The two wings of a bat.

5 Cairo Governorate

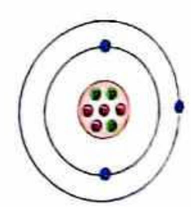
Alfarouk Islamic Language School

Answer the following questions :

Question 1

A Complete the following statements :

1. When some metallic spheres are put in a container and shaken, the temperature of the spheres increases as .... energy changes to .... energy.
2. Spare parts of cars are coated with grease to protect them from ....
3. When a bottle of perfume is opened, its odour spreads. This is because molecules of matter are in continuous ....
4. The symbol of potassium is .... while that of gold of ....
5. Monkeys have .... to climb trees and catch things.
6. The diagram represents an atom. This atom has a mass number of ....



B Give reasons for :

1. Some animals hide in humid burrows in summer.
2. Solids keep their shape and volume.

C Match :

(A)	(B)
1. Rubber	a. potential energy + kinetic energy.
2. Bat	b. the smallest building unit of a matter that can exist freely and carry the properties of matter.
3. Molecule	c. good electric conductor.
4. Mechanical energy	d. soft at ordinary temperature.
	e. $\frac{1}{2} \times$ mass $\times$ (speed)^2
	f. front limbs are modified into wings.

Question 2

A Choose the correct answer :

1. In a kettle, hot water rises up by ....
   a. radiation. b. convection. c. conduction. d. condensation.

2. An iron ball at 60°C is dropped in a beaker containing water at 40°C. the heat will ....
   a. flow from the iron ball to the water. b. flow from the water to the iron ball.
   c. not flow from the iron ball to the water or from the water to the iron ball.
   d. none of the above.

3. Which points has the same potential energy ? ....
   a. X & O
   b. Y & Z
   c. X & Z
   d. P & Y

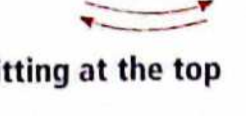
4. .... are birds that migrate in winter.
   a. Quails b. Ducks c. Bats d. Geese

5. When a student adds 200 ml of ethyl alcohol to 300 ml of water in a cylinder, he finds that the volume of the mixture was less than 500 ml as he expected. This is because ....
   a. Water evaporates quickly.
   b. The molecules of alcohol are in a continuous motion.
   c. Some alcohol may have spilt down when putting it in the cylinder.
   d. Alcohol molecules distribute within the space between water molecules.

6. An object has a mass of 45 grams and a volume of 30 cm^3. What is the density of the object ? ....
   a. 0.2 gm/cm^3 b. 1.5 gm/cm^3 c. 5 gm/cm^3 d. 20 gm/cm^3

7. How many electrons are there in the last energy level of the atom with atomic number 7 ? ....
   a. 3 b. 4 c. 2 d. 5

8. From the following figure, maximum kinetic energy is at point ....
   a. A
   b. A & C
   c. B
   d. C



B What is the gravitational potential energy stored in a 55 kg teenager sitting at the top of a 4 m high tree ? (The Earth's gravity equals 10 N/kg).

C Cross the odd word out and write the relation among the others :

1. Sulphur – Silver – Phosphorus – Air.
2. Julius – House fly – Honey bee – Ant.
3. Maize – Pine – Wheat – Pea.
4. Tiger – Lion – Rabbit – Sloth.

Question 3

A Correct the underlined words :

1. In the simple electric cell, **heat** energy converts to electric energy.
2. **Ammonia** molecule is formed of 1 hydrogen and 1 chlorine atoms.
3. Insectivorous plants need nitrogenous substances to build **carbohydrates**.
4. **Nickel chrome** alloy is used in making jewels.
5. Birds like **hawks** have wide indented beaks to feed on fish and mosses.
6. The energy level K is saturated by **8** electrons.
7. **Gold** easily reacts with oxygen when exposed to humid air.
8. **Adiantum** is a unicellular organism.

B What is meant by ... ?

Species.

C Give an example of :

1. A device that changes electric energy to kinetic energy.
2. Functional adaptation.
3. Monoatomic liquid element.
4. Animal with external support.

Question 4

A Write the scientific term :

1. The work done by an object during its motion.
2. The science that deals with classifying living organisms into groups according to their similarities and differences to ease their study.
3. The ability of some living organisms to hide from their enemies.
4. A substance which is formed due to the combination of two or more atoms of different elements with constant weight ratios.
5. It is the temperature at which the matter begins to change from the solid state to the liquid state.
6. The measuring unit of energy.
7. The amount of energy gained or lost by an electron to transfer from an energy level to another.
8. Modification of living organism's behaviour or body structure or function of its organs to adapt with environmental conditions.

B **What happens when a piece of iron is put in a bowl filled with water ? Why ?**

C **Phosphorous has the following formula :**

31 P 15

1. Phosphorous atom has :
   a. .... neutrons in its nucleus
   b. An atomic number of ....
   c. An electronic configuration of ....
2. Is it chemically active or an inactive element ? ....

6 Cairo Governorate — Manaret El-Eman Language Schools

Answer the following questions :

Question 1

A **Write the scientific term :**

1. It is the temperature at which the substance changes from solid state to the liquid state.
2. The spaces between molecules.
3. The ability to do work or to make a change.
4. The way by which the heat is transferred through solids.

B **Give reasons for :**

1. Balloons of hydrogen and helium rise up in the air.
2. The nucleus of the atom is positively charged.
3. The freezer is found at the top of the fridge.
4. Amoeba is from micro-organisms.

C **Write the electronic configuration for the following elements, then :**

1. Calculate the number of neutrons.
2. Determine if the atom is active or inactive and mention the reason.
   a. ${}^{35}_{17}Cl$
   b. ${}^{16}_{8}O$

Question 2

A **Complete the following statements :**

1. The front limbs of dolphins are modified into .... to perform the role of ....
2. The liquid elements that its molecule consists of only one atom is .... while that consistants of two atoms is ....
3. From the teethless mammals are .... and ....
4. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.

B What happens when ... ?

1. Putting a drop of ink in water.
2. Rubbing your hands together.
3. An electron in "K" energy level gains a quantum of energy.
4. Predatory plants can't capture insects for a long time.

C Problem :

Find the weight of an object of potential energy 88 joule when it is found at a height of 11 m.

Question 3

A Put (✓) or (✗), then correct the wrong ones :

1. Molecules of the same substance are different from each other. ( )
2. Mass number is the sum of protons and electrons. ( )
3. Hibernation of some reptiles and some insects is structural adaptation. ( )
4. Pea plant belongs to dicotyledon. ( )

B Compare between (one point only) :

1. Insects and arachnids.
2. Kinetic energy and potential energy.
3. Sodium and gold. (chemical activity)
4. Protons and electrons. (charge)

C Mention one example of each of the following :

1. Insectivores plant.
2. An animal which doesn't have a body support.

Question 4

A Choose the correct answer :

1. On adding 100 cm^3 of water to 100 cm^3 of alcohol, the volume of mixture equals .... cm^3.
   a. 100 b. 200 c. 180 d. 210
2. An object has a kinetic energy 64 joule and its mass 8 kg, so its speed equals ....
   a. 16 m/sec. b. 8 m/sec. c. 4 m/sec. d. 2 m/sec.
3. The plant that reproduces by spores is ....
   a. pine. b. bean. c. vougheir. d. maize.
4. Sodium is symbolized by ....
   a. Hg b. S c. Si d. Na

B Mention one difference :

1. Fish and desert snail (body support).
2. Helium and hydrogen.
3. Element and compound.
4. Transfer of heat by convection and transfer of heat by radiation.

C **What is the function of each of the following ... ?**

1. The elongated front limbs in monkey.
2. Strong and sharp crooked beaks in hawks.

7 Giza Governorate — Modern Narmer Language School

Answer the following questions :

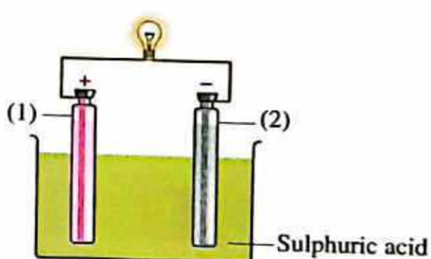
Question 1

A **Complete the following statements :**

1. When an object is moved upwards, the energy changes from .... to ....
2. The gaseous element whose molecule is composed of 2 atoms is .... while that which is composed of one atom is ....
3. The amount of energy needed or lost to transfer an electron from energy level to another is called ....
4. Heat transfers in solids by .... but it transfers in gases by ....
5. The front limbs in bats are modified into ....

B **Examine the opposite figure :**

1. What is name of the figure ?
2. Complete labels (1) and (2).
3. What happens when you connect (1) and (2) with an electric wire ?



C **Write the chemical symbol of each of the following elements :**

1. Calcium. 2. Silver. 3. Potassium.
4. Iron. 5. Mercury. 6. Carbon.

Question 2

A **Write the scientific term :**

1. Positively charged particles in nucleus of an atom.
2. Temperature at which a substance changes from solid state to liquid state.
3. Smallest part of matter that can exist freely and has properties of the substance.
4. The energy which is stored in an object due to work done on it.

B **A body of mass 6 Kg moves with speed 4 m/s, Calculate kinetic energy of this body.**

C Join the correct pairs from the column (A) and (B) :

(A)	(B)
1. In making cooking pots we use	a. silver.
2. In making handles of screwdriver we use	b. oxygen and hydrogen.
3. To distinguish between iron and gold we use	c. oxygen only.
4. Water molecule is made from	d. aluminium.
5. In making jewels we use	e. color.
	f. plastic.

Question 3

A What is the element which has the following symbol :

1. Si 2. Cu 3. H 4. Zn 5. Na

B Give reasons for :

1. In normal conditions, atoms of elements are electrically neutral although they contain positive and negative particles.
2. Hawks have strong and sharp beaks.
3. It is better to place the electric heaters down on the ground.
4. In atoms of elements the mass number is greater than the atomic number.

C What is meant by ... ?

1. Camouflage.
2. The compound.

Question 4

A Choose the correct answer :

1. In cold winter, some animals bury themselves in mud to overcome the decrease in temperature, this is called ....
   a. aestivation. b. migration. c. hibernation. d. taxonomy.
2. Chemical energy can be stored in ....
   a. car battery. b. raising an object upwards.
   c. electric lamp. d. a moving car.
3. The energy level (N) is saturated with ....
   a. 2 electrons. b. 32 electrons. c. 8 electrons. d. 18 electrons.
4. An object its mass 5 kg is placed at height 2 m, acceleration due to gravity is 10 m/s^2, thus weight of the object equals ....
   a. 10 N. b. 100 N. c. 50 N. d. 20 N.
5. The organisms which have 4 pairs of joined legs are the ....
   a. insects. b. snails. c. worms. d. arachnids.

B A piece of copper its volume is 200 cm^3 and has a mass 164 grams, calculate density of copper.

C The following are atoms of 3 elements :

1. $^{16}_{8}O$ 2. $^{35}_{17}Cl$ 3. $^{40}_{20}Ca$

a. Write electronic configuration of each atom.

b. Find number of energy levels in each atom.

8 Giza Governorate

6th October Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Potential energy of body depends on .... and ....
2. Helium molecule consists of .... atom while hydrogen molecule consists of .... atom.
3. The .... and .... solutions are good conductors of electricity.
4. .... is permanent resource of energy.
5. An alloy of .... is used in making jewels but an alloy of .... is used in heating coils.
6. Solar heater changes .... energy to .... energy.

B Give reasons for :

1. The atom is electrically neutral.
2. Some birds have wide indented beaks.

C Write the chemical symbol for each :

1. Potassium. 2. Iron. 3. Carbon. 4. Oxygen.

Question 2

A Choose the correct answer :

1. From the substances that float on water is ....
   a. iron. b. oil. c. copper. d. aluminium.
2. From animals with soft bodies ....
   a. snail. b. jellyfish. c. snake. d. turtle.
3. Heat transfers by conduction through ....
   a. gases only. b. liquids only. c. solid only. d. vacuum only.

4. The attraction force between solids is ....

a. strong. b. weak. c. medium. d. infinity.

5. Taste property distinguish between ....

a. milk and honey. b. silver and gold. c. wood and plastic. d. iron and copper.

6. Electric lamp changes the electric energy into .... energy.

a. light b. sound c. chemical d. magnetic

B Define :

1. Element.
2. Mechanical energy.

C Give one example for each :

1. Substance soft at room temperature.
2. Substance sink in water.
3. Very active metals.
4. Arthropods have 3 pairs of jointed legs.

Question 3

A Write the scientific term :

1. Temperature at which matter begins to change from solid to liquid.
2. Invertebrates which have jointed legs.
3. Work done during the motion of an object.
4. Modification in organisms body structure or function of its organs to be adapted.
5. Atom that gains a quantum of energy.
6. The sum of protons and neutrons in nucleus.

B Write electronic configuration form each :

1. ${}^{7}_{3}Li$
2. ${}^{20}_{10}Ne$

C Find the density of a piece of iron if its mass 78 gm and its volume 10 cm^3

Question 4

A Put (✓) or (✗), then correct the wrong ones :

1. Cold air rises up and hot air falls down. ( )
2. Iron rusts when exposed to wet air. ( )
3. Webs of cellular phone cause water pollution. ( )
4. Animals can be classified according to body support. ( )
5. Boiling point is the temperature which matter changes from liquid to gas. ( )
6. Heat transfers in space by radiation. ( )

B Compare between solid and gas in regarding (intermolecular space, examples).

C A ball launched upwards at a speed 3 m/s up to height 4 m find the kinetic and potential energies of the ball if its weight is 5 newton and has a mass 0.5 kg.

9 Giza Governorate — Egypt Dream Language School

Answer the following questions :

Question 1

A Choose the correct answer :

1. An object its kinetic energy is zero when the object is at the ....
   a. maximum height. b. Earth's surface. c. midpoint. d. no correct answer.
2. Resources of permanent energy is ....
   a. Sun. b. coal. c. petrol. d. nuclear reaction.
3. When the atomic number of an element equals to its mass number this means that there is no ....
   a. electrons. b. protons. c. neutrons. d. nucleus.
4. Chemical energy can be stored in ....
   a. car lamp. b. raising a load upwards.
   c. sound. d. car battery.

B Write electronic configuration then calculate :

$^{39}_{19}K$

a. Write the symbol name. b. The mass number.
c. The number of neutrons. d. The number of electrons in the outer level.

C Calculate the potential energy of :

An object of 20 N weight is placed at 5 m height.

Question 2

A Give reasons for :

1. Spider isn't considered from insects.
2. The nucleus is electrically positive.
3. The freezer of the fridge is found at the top of the fridge.
4. Cooking pots are made of copper or aluminium.

B Give an example for each of the following :

1. Inert (Noble) gas.
2. A device converts solar energy into electric energy.
3. Solid substances are soft in room temperature.
4. Hibernation in amphibia.

C Show by drawing the electric configuration for each of the following atoms :

1. $^{40}_{20}Ca$ 2. $^{32}_{16}S$

Question 3

A Complete the following statements :

1. Sodium symbol is ...., where nitrogen symbol is ....
2. The photosynthesis process changes .... energy into .... energy.
3. The positive pole in simple electric cell is .... , while the negative pole is ....
4. .... and .... are from examples of micro-organisms.

B Write the scientific term :

1. The energy level that has the highest energy.
2. Amount of energy needed or lost to transfer an electron from an energy level to another.
3. The measuring unit of density
4. It is a branch of biology that searches for the similarities and the differences among living organisms and it places the similar ones in groups according to a certain system.

C Choose the odd word :

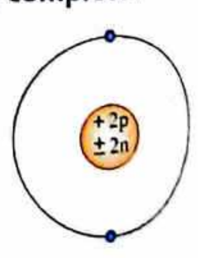
1. Wax – Aluminium – Butter – Ice.
2. Acidic solution – Sugar solution – Salt solution – Alkaline solution.

Question 4

A Rewrite the following statements after correcting the underlined words :

1. **Protons** are neutral charged particles.
2. The **kinetic energy** of an object increases by the increase of the weight and height.
3. An alloy of **iron and cobalt** is used in making jewels.
4. The transfer of heat in gases and liquids by **conduction**.

B The opposite figure represents the electronic configuration of an atom, complete :



1. The atomic number ....
2. The number of electrons ....
3. The mass number ....
4. The elements is considered .... (active – inactive) gas.

C Mention the type of adaptation of each of the following :

1. Birds migration.
2. Secreting poison in snake.

10 Giza Governorate

North Giza Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The nucleus of an atom contains .... and ....
2. The front limbs in whale are modified into .... , while in bat are modified into ....
3. Copper - gold alloy is used in making .... , while nickel - chrome alloy is used in making ....
4. Heat transfers through solids by .... and through liquids by ....

B What happens when ... ?

1. Cold object touches hot object.
2. An electron gains a quantum of energy.
3. The mass number in an atom equals the atomic number.
4. The ball of pendulum reaches to the maximum height. (concerning to K.E and P.E)

C What is meant by ... ?

1. Molecule.
2. Taxonomy

Question 2

A Mention one example for :

1. Solution conducts electricity.
2. Renewable source of energy.
3. Fern plant.
4. Monoatomic element.

B Correct the underlined words :

1. Camel has **hoof** to walk in sand.
2. **Coal** is soft at room temperature.
3. **Fish** have external body support.
4. The intermolecular spaces are narrow among molecules of **liquids**.

C Write the symbols of the following elements :

1. Mercury.
2. Sodium.

Question 3

A Mention one deference between :

1. Hedgehog and sloth.
2. Gold and potassium.
3. Element and compound.
4. Simple cell and solar cell.

B **Write the scientific term :**

1. The basic classification unit of living organisms.
2. Imaginary regions around the nucleus in which electrons revolve in it.
3. The temperature at which the matter changes from liquid state to gaseous state.
4. Mass of unit volume of substance.

C **Solve the Problem :**

Find the potential energy of an object its mass = 5 kg and found at a height of 4 meters from the ground. [$g = 10\ m/s^2$].

Question 4

A **Give reasons for :**

1. Atom is electrically neutral.
2. Spider belongs to arachnids while ant belongs to insects.
3. Air conditioner is fixed at the top of a room.
4. Iron sinks in water, while wood floats on water.

B **Choose the correct answer :**

1. The attraction force among molecules of gases is ....
   a. strong. b. weak. c. almost not existed.
2. Chemical energy is changed into heat energy in ....
   a. car engine. b. dynamo. c. photosynthesis process.
3. Pea plant belongs to .... plants.
   a. monocotyledon b. dicotyledon c. gymnosperm
4. The density of mass 8 gm of cork whose volume 16 cm^3 is ....
   a. 2 gm/cm^3 b. 5 gm/cm^3 c. 0.5 gm/cm^3

C **Write the electric configuration of the following :**

1. $_{12}Mg$ 2. $_{20}Ca$

11 Alexandria Governorate

Taymour English School

Answer the following questions :

Question 1

A **Write the scientific term :**

1. The spaces found among the molecules of matter.
2. Energy is neither created nor destroyed but can change from one form to another.
3. It is a behaviour through which some animals escape from high temperature in summer.

4. Changing of kinetic energy to heat energy when two surfaces are touching each other.
5. Imaginary places around the nucleus and they are symbolized by K , L , M , N , O , P and Q.
6. Transferring of heat through vacuum.
7. Permanent and clean source of energy.

B What is the type of species in the following ... ?

1. Cycas and pine plant.
2. Jellyfish.

C Calculate the mass of a body whose density is 4.5 gm/cm^3 and its volume is 3 cm^3?

Question 2

A Give reasons for :

1. The atom is electrically neutral.
2. It is preferred to put the heater on the ground.
3. We cannot put off petrol fires with water.
4. Some plants eat insects.

B A ball of mass 0.25 kg is raised to a maximum point at a height 6 m. Calculate its potential energy and kinetic energy at : (Knowing that acceleration due to gravity = 10 m/sec^2)

a. Maximum height.
b. 4 meters height.

C Correct the underlined words :

1. **Boiling** is the temperature at which liquids start to change into gases.
2. **Hydrogen** gas is a compound.
3. Scorpion is from **myriapods**.
4. In **dynamo**, chemical energy is changed into electric energy.

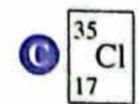
Question 3

A Complete the following statements :

1. The energy level .... is filled with 32 electrons according to the rule ....
2. Heron has long and .... beaks to pick up ....
3. You are not doing a work when the displacement = ...
4. On heating a solid object, the intermolecular forces become ....
5. .... is the symbol for potassium.
6. The hardness of .... is more than that of copper.

B What happens if ... ?

1. You put 200 cm^3 ethyl alcohol to 400 cm^3 water (and why ?).
2. The atom gained a quantum of energy.
3. The number of neutrons inside an atom is zero.

C 

1. Draw its electronic configuration.
2. Name this element.
3. Find the number of its neutrons.

Question 4

A **Cross out the odd word and write the scientific term of the rest of the words :**

1. Potassium – Copper – Sodium.
2. Mass – Velocity – Height.
3. Fish – Snail – Crocodile.

B **Compare between (1 point for each) :**

1. Salt solution and sugary solution.
2. Oil and oxygen (according to the motion of molecules).
3. Neutrons and electrons.
4. Armadillo and hedgehog.

C **Choose the correct answer :**

1. Vougheir plant belong to ....
   a. plants that reproduce by formation of seeds.
   b. plants that are not distinguished into roots, stem or leaves.
   c. plants that reproduce by formation of spores.
   d. plants that are not gymnosperms.
2. Television produces ....
   a. electric energy
   b. chemical energy
   c. light and sound energy
   d. kinetic energy
3. The front limbs of dolphins are modified into ....
   a. tails to swim.
   b. wings to fly.
   c. elongated limbs to swim.
   d. paddles to swim.
4. The mathematical formula used to calculate work is : ....
   a. force + displacement.
   b. potential energy + kinetic energy.
   c. weight + height.
   d. mass × velocity.
5. .... is an inactive metal.
   a. Gold
   b. Iron
   c. Aluminium
   d. Carbon
6. .... is a diatomic liquid element.
   a. Iodine
   b. Mercury
   c. Water
   d. Bromine
7. From the organisms that can make camouflage ....
   a. horse.
   b. adiantum.
   c. chameleon.
   d. earthworm.

12 Alexandria Governorate

El-Montazah Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Solar cell is used to change .... energy into .... energy.
2. Cockroach has .... pairs of jointed legs while bee has .... legs.
3. Heat transfers through space by .... while it transfers through solids by ....
4. Mercury molecule has .... atom(s) while argon molecule has .... atom(s).
5. The symbol of magnesium is .... while the symbol of sulphur is ....

B Cross the odd word out :

1. Cow – Fish – Dolphin – Jellyfish.
2. Ammonia – Table salt – Hydrogen chloride – Hydrogen.
3. Aluminium – Gold – Iron – Copper.
4. Rat – Squirrel – Jerboa – Rabbit.

Question 2

A Choose the correct answer :

1. Some animals are called rodents such as ....
   a. armadillo. b. hedgehog. c. rabbit. d. rat.
2. Secretion of sweat in the human is .... adaptation.
   a. structural b. behavioural c. anatomical d. functional
3. The potential energy of an object at height 8 meters is 800 j. the weight of an object is .... newton.
   a. 60 b. 100 c. 1600 d. 200
4. As we go further from the nucleus the energy level ....
   a. increases. b. decreases. c. doesn't change. d. reduces.
5. The .... bird migrates from a cold region to a warm region for reproduction.
   a. pigeon b. vulture c. quail d. geese
6. When the substance sinks in the water surface means its density ....
   a. Less than $1 gm/cm^3$ b. more than $1 gm/cm^3$
   c. equal $1 gm/cm^3$ d. half density of water.

B **Mention one difference between :**

1. A very active metal and inactive metal.
2. Angiosperms and gymnosperms.

C **A ball at height 4 m from the ground and its weight = 800 newton find :**

1. The kinetic energy at the maximum height.
2. The potential energy at the maximum height.

Question 3

A **Correct the underlined words :**

1. The melting point of table salt is **equal to** the melting point of the wax.
2. The N level is saturated with **8** electrons.
3. Heat of the Sun is transferred to the Earth through space by **conduction**.
4. The beak of the **hawk** is long and thin to pick up snails.
5. From the insectivores plant **pine**.
6. The relation needed to find the number of electrons in each energy level is $\mathbf{n^2}$.

B **Explain by drawing the electronic configuration of the following element**

1. $^{24}_{12}Mg$
2. $^{36}_{16}Ar$

Then explain the chemical activity of each element.

C **What is meant by the density of water = 1 gm/cm^3 ... ?**

Question 4

A **Write the scientific term :**

1. Mass of unit volume.
2. The temperature at which the substance begins to change from liquid to gas.
3. Amount of energy that gained or lost by the electron to transfer.
4. Alloys are used to make jewels.
5. Compound consists of two hydrogen atoms and one oxygen atom.
6. A permanent source of energy.

B **Mention an example :**

1. A bird feeds on fish and mosses has a wide beak.
2. A tool changes the electric energy into heat energy.
3. A plant has no roots or stems or leaves.
4. A solution allows the electric current to pass.

C **Find the mass of a piece of iron its volume = 3 cm^3 and the density of iron is 7.8 gm/cm^3**

 Alexandria Governorate

El-Agamy Directorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. We can distinguished between .... according to the electric conductivity.
   a. copper and iron b. copper and wood c. wood and plastic d. air and plastic
2. The measuring unit of work done is ....
   a. kilogram. b. newton. c. gm/cm^3. d. joule.
3. From teethless mammals ....
   a. sloth. b. tiger. c. squirrel. d. hedgehog.
4. The diatomic liquid is ....
   a. bromine. b. mercury. c. helium. d. nitrogen.
5. The number of electrons in the outer level of $_{17}Cl$ is ....
   a. 3 b. 8 c. 17 d. 7
6. Cycas belongs to ....
   a. algae. b. angiosperms. c. gymnosperms. d. ferns.

B Give reasons for :

1. The volume of mixture of water and alcohol is less than the sum of them.
2. The camel's leg end with thick flat pad.
3. The heater is put near the bottom of room.
4. The atom is electrically neutral.

Question 2

A Write the scientific term of the following :

1. Temperature at which liquid state starts to change into gaseous one.
2. Branch of biology that research the similarities and differences among living organisms and put similar in one group to ease their study.
3. Energy stored in an object due to work done.
4. The amount of energy which lost or gained by electron to transfer from energy level to another.
5. The ability of living organisms to hide from enemies by simulate the dominant natural conditions in their environment.

B Give one example :

1. Myriapod.
2. Permanent source of energy.
3. Inert gas.
4. Ferns.
5. Alloy used in making cooking pots.

C What is meant by ... ?

1. Molecule.
2. Species.

Question 3

A Complete the following :

1. The density is the .... of unit volume and its measuring unit ....
2. When the body rise up its potential energy .... and its kinetic energy ....
3. Insects belong to .... and have .... pairs of jointed legs.
4. Front limbs of bat are modified into .... to ....
5. The method of transfer heat through copper is .... while the method of transferring the heat of Sun to us is ....

B Write the electronic configuration of the following :

1. $_{11}Na$
2. $_{7}N$
3. $_{20}Ca$
4. $_{2}He$

C Problems :

1. If the mass of object 5 kg find its potential energy at 2 m height (if the acceleration due to gravity = 10 m/sec^2)
2. If the car move by speed 2 m/sec. calculate its kinetic energy if its mass 10 kg.

Question 4

A Put (✓) in front of correct statement and (✗) in front of wrong once :

1. Secreting poison in snake considered as structural adaptation. ( )
2. The symbol of sodium (S) and the symbol of potassium (P). ( )
3. The potential energy at maximum height equal zero. ( )
4. The charge of electrons is negative and protons is positive. ( )
5. Pine plant and cycas from angiosperms. ( )
6. Arachnids like spider have 8 jointed legs. ( )

B What happens when ... ?

1. The electron gain amount of energy.
2. Frogs can't make hibernation.
3. The weight of object is doubled at constant height (according to potential energy).
4. Heating an amount of water (according to intermolecular space and intermolecular force).

14 AL Qalyoubia Governorate

Science Inspectorate

Answer the following questions :

Question 1

A Complete the following statements :

1. .... alloy is used in making jewels, while .... alloy is used in making heating coils.
2. The monoatomic liquid is .... , while the diatomic liquid is ....
3. In photosynthesis process, ... energy changes into .... energy.
4. Mussels are from animals that have .... support, while fish are from animals that have .... support.

B Give an example of each of the following :

1. A very active metal.
2. A micro-organism.
3. A noble gas.
4. A substance that has low melting point.

C A piece of marble, its mass is 100 gram is immersed in a measuring cylinder containing water, then water raised from 40 cm^3 to 60 cm^3 What is the density of the marble.

Question 2

A Write the scientific term for each of the following :

1. The atom that gains a quantum of energy.
2. A set of similar animals in their shape and can reproduce to give new fertile individuals.
3. Energy is neither created nor destroyed, but it is converted from one form to another.
4. The result of the combination between two or more atoms of different elements with constant weight ratios.

B Correct the underlined word (s) :

1. Transfer of heat by **conduction** doesn't need a material medium.
2. **Pea plant** reproduces by formation of spores.
3. **Sugary** solution is a solution which is good conductor of electricity.
4. **Copper** rod is the negative pole in the simple electric cell.

C A moving pendulum has a potential energy of 0.8 joule at maximum displacement. If the mass of its ball is 0.08 kg and acceleration due to gravity is 10 m/s^2 Calculate the height of the pendulum at maximum displacement.

Question 3

A Put sign (✓) or (×) in front of each of the following, then correct the wrong one :

1. Smell property is a distinguishing factor between perfume and ammonia. ( )
2. When air is cooled, its density decreases, so it falls down. ( )
3. Angiosperms are called flowering plants. ( )
4. Melting point is the temperature at which the matter changes from solid state to liquid state. ( )

B Write the electronic configuration for each of the following :

1. Calcium $^{40}_{20}Ca$. 2. Chlorine $^{35}_{17}Cl$. 3. Nitrogen $^{14}_{7}N$. 4. Argon $^{40}_{18}Ar$.

C Choose the odd word out, and give a reason for your choice :

Ice – Wood – Cork – Iron

Question 4

A Choose the correct answer from each of the following :

1. Which of the following devices pollutes the environment ? ....
   a. Gas oven. b. Electric oven. c. Electric heater. d. Solar heater.
2. Birds migration represents .... adaptation.
   a. structural b. behavioural c. functional d. anatomical
3. An example of a living organism that undergoes hibernation is ....
   a. frog. b. jerboa. c. desert snail. d. sloth.
4. Equal masses of different substances have .... volumes.
   a. constant b. equal c. similar d. different

B Compare between each of the following :

1. Solids and gases (according to the attraction force).
2. Sodium and copper (according to the chemical activity).

C Write the symbol of each of the following :

1. Sulphur. 2. Iron. 3. Potassium. 4. Helium.

15 El Menofia Governorate — Menouf Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Density measuring unit is .... so density equal mass over ....
2. The product of force × displacement is ...., its unit is ....

3. The symbol of sodium is .... while the symbol of potassium is ....
4. .... and .... are teethless mammals.

B Write the number which indicates the following :

1. The number of energy levels in the largest known atom is ....
2. Potential energy = kinetic energy = ... mechanical energy (in the middle distance of the height between the top and the ground).
3. An object of mass 2 kg moves with a speed of 4 m/s has a kinetic energy .... joule.
4. The smallest atomic number of an element which its electrons rotating around the nucleus in 3 energy levels in ordinary state is ....

C Give a reason for :

Some table salt disappears after a while when added to water without stirring.

Question 2

A Choose the correct answer :

1. If the nucleus of carbon atom contains 6 protons and 6 neutrons, so the atomic number equal .... in the stable state.
   a. 12 b. 6 c. 8 d. 16
2. .... is the density of 35 gm of a substance that occupies 25 cm^3.
   a. 14 gm/cm^3 b. 1.4 gm/cm^3 c. 4 gm/cm^3 d. 1 gm/cm^3
3. The energy in the .... changes from potential energy into kinetic energy and vice versa.
   a. car battery b. simple electric cell c. simple pendulum d. fan motor
4. .... is an example of the plants which feed on insects.
   a. Vougheir b. Dieonea c. Cycas d. Wheat

B Put (✓) or (✗) :

1. Hedgehog has front teeth extending outwards. ( )
2. Substances have different chemical properties. ( )
3. Atomic number is the number of neutrons in nucleus. ( )
4. Microorganisms spread out every where around us in air, soil and water. ( )

C Compare between :

Transfer of heat by conduction and radiation (concerning the medium that transfer through it).

Question 3

A Mention the scientific term :

1. It is a branch of biology searching the similarities and differences among living organisms.
2. Energy is neither created nor destroyed but it is converted from one form to another.

3. It is the temperature at which matter begins to change from a liquid state to a gaseous state.
4. The smallest particle of the matter that can share in chemical reactions.

B **Choose odd word out :**

1. Solar cell – Dynamo – Dry cell – Motor.
2. Sun – Coal – Petrol – Natural gas.
3. Water – Oil – Alcohol – Water vapour.
4. $_{1}H$ – $_{8}O$ – $_{17}Cl$ – $_{18}Ar$

C **Give one difference between :**

Insects and arachnids.

Question 

A **Study these figures well then determine each of the following :**

Figure	Question
1. K L M; 17 p 18 n; 2 8 7	1. Mass number of this atom = ... 2. The number of energy levels having electrons = ...
2. Fig. (1) Fig. (2)	Fig. (1) : represents the .... molecule. Fig. (2) : represents the .... molecule.
3. Potential energy (joule): 80, 60, 40, 20, Zero; Height (meter): 2, 4, 6, 8	1. The value of potential energy at the height 4 m. = ... 2. The weight of this object = ...
4. Fig. (1) Fig. (2)	What is the number of sharp incisors in each jaw. • Rodents (fig. 1) .... • Lagomorphs (fig. 2) ....

B Choose the correct word from the brackets :

(carbon – copper – radiation and convection – structural – equals – more than – functional – convection only).

1. Density of 12 gm from pure iron .... the density of 2 gm from it.
2. .... is a good conductor matter for heat and electricity.
3. Secreting poison in snakes is considered a .... adaptation.
4. Heat transfers from a heater by ....

C What happen when ... ?

Dipping two different metals connected by a wire in an acidic solution.

16 Dakahlia Governorate — Science Inspectorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Ammonia molecule consists of two .... and four ....
2. The outer energy level in $_{16}S$ contains .... electrons but in $_{7}N$ .... electrons.
3. In solar cells the .... energy is direct converted into .... energy.
4. Micro-organisms differ from each other in .... and ....

B Choose the correct answer :

1. Number of electrons that saturate the level N equal ....
   a. 2n b. n^2 c. $2n^2$ d. $(2n)^2$
2. Substance finds great difficulty to react with oxygen like ....
   a. Na b. K c. Fe d. Au
3. When pulling a string of an arc the work done to pull it is stored in ....
   a. kinetic energy. b. chemical energy. c. heat energy. d. potential energy.
4. Pea plant belongs to .... plant.
   a. ferns b. monocotyledon c. dicotyledon d. gymnosperm

C On determining iron density using a piece of iron of mass 78 gm, the piece is immersed in 100 cm^3 of water the water level rises up to 110 cm^3. Calculate iron density.

Question 2

A Write the scientific term :

1. The temperature at which a substance begins to change from a liquid state into a gaseous state.
2. The simplest pure form of a substance, we could not decompose it chemically into a simpler substance.

3. Cell is composed of an acid solution with two different metals dipped in.
4. The ability of some body organs and tissue to do certain functions.

B **Correct the underlined words :**

1. An element the outer energy level (N) contains one electron and its mass number is 39, so its nucleus contains **18** neutrons.
2. On adding 200 cm^3 from ethyl alcohol to 300 cm^3 of water in a measuring cylinder, the volume of the mixture **equals** 500 cm^3.
3. The organs of birds that are adapted for feeding are the **wings and eyes**.
4. Halophila digest the insects to absorb the nitrogenous substances to form **carbohydrates**.

C **A ball was launched upwards and vertically at a speed 6 m/s up to height 8 m calculate the mechanical energy of the ball if its weight is 10 newton and its mass 0.5 kg.**

Question 3

A **Choose the odd word out, then write the scientific name of the rest :**

1. Electron – Quantum – Proton – Neutron.
2. Ice – Coin –Wood – Oil .
3. Water motion – Food – Nuclear reaction – Electric energy.
4. Gas oven – Coal heater – Petrol stove – Solar oven.

B **Put (✓) or (✗) :**

1. Water is not used in extinguishing petrol fires. ( )
2. The energy of level O is smaller than that of level M. ( )
3. Heat transferred through aluminium pots by convection. ( )
4. Energy is neither created nor destroyed but it cannot be transformed into another form. ( )

C **What is the result based on the following :**

The variety of the ways of motion in mammals. ( )

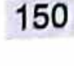
Question 4

A **Answer according to that in the brackets :**

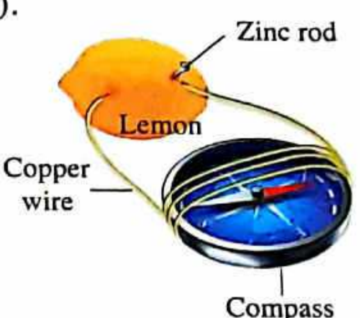
1. $_{20}Ca$ / $_{2}He$ / $_{18}Ar$ [Arrange the element ascendingly according to the number of energy levels].
2. From the figure :

(Mention the modification in the front limbs and why ?).





3. Sugar solution / salt solution / sulphur / alkaline solution
   (classify the substances according to their electric conductivity).
4. From the opposite figure :
   (What is the scientific idea).



B **Find the mistakes in the following sentences. Then correct them by copying the whole correct sentence in your answer sheet :**

1. Silver element has symbol Si.
2. If an atom loses a quantum of energy the electron transfers from L to N level.
3. African, Asian and Egyptian human belong to different species.
4. Scorpion has five pairs of jointed legs.

C **Give a reason for :**

Some animals undergo hibernation.

17 Gharbia Governorate — East Tanta Directorate

Answer the following questions :

Question 1

A **Complete the following statements :**

1. The liquid element which consists of one atom is ...., while that consists of two atoms is ....
2. The electrons of the potassium atom ($_{19}K$) are distributed in .... energy levels and the outermost energy level contains .... electron(s).
3. As doubling the height to which an object is raised from the ground, the potential energy increases to ....
4. Vertebrates have .... support, while mussels have .... support.
5. Heat is transferred throught iron by ....

B **Choose the odd word out, then write the scientific term of others :**

1. Solar oven – Solar heater – Solar battery – Solar stove.
2. Ammonia – Water – Aluminium – Hydrogen chloride.
3. Nuclear weapons – Car exhaust – Chemical pesticides – Solar cells.
4. Nitrogen – Argon – Helium – Neon.

C **Mention one life application on :**

1. Density.
2. Electric conduction.

Question 2

A **Write the scientific term of the following :**

1. The ability of somebody's organs and tissues to do certain functions.
2. Energy is neither created nor destroyed, but it is converted from one form to another.
3. The space that is found among the molecules of matter.
4. The atom that gains a quantum of energy.

B **Give an example for each of the following :**

1. Ferns.
2. Alloy that is used in making jewels.
3. Lagomorphs.
4. A compound molecule consists of four atoms.

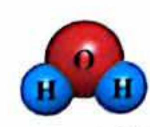
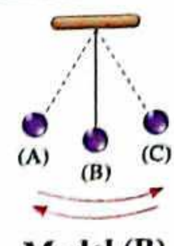
C **Calculate the potential energy of an object its weight is 32 newton and its height is 4 meters.**

Question 3

A **Put (✓) or (✗) then correct the wrong one :**

1. The mass number is always smaller than the atomic number. ( )
2. Cool air falls down, but hot air rises up ( )
3. Iron rusts when it is exposed to dry air. ( )
4. Drosera, halophila, and dieonea are heterotrophic insectivorous plants. ( )

B **Choose the correct answer :**

 Model (A)	1. Model (A) represents .... (ammonia – hydrogen chloride – carbon dioxide – water) 2. The number of elements of the model (A) is .... (1 – 2 – 3 – 4)
 Model (B)	1. Model (B) represents simple pendulum, the potential energy is maximum at position .... (A – B – C – both A, C) 2. If you know that the mechanical energy = 800 joule and kinetic energy = 650 joule at rest position, the potential energy = ... joule. (zero – 150 – 800 – 1450)

C **What happens when ... ?**

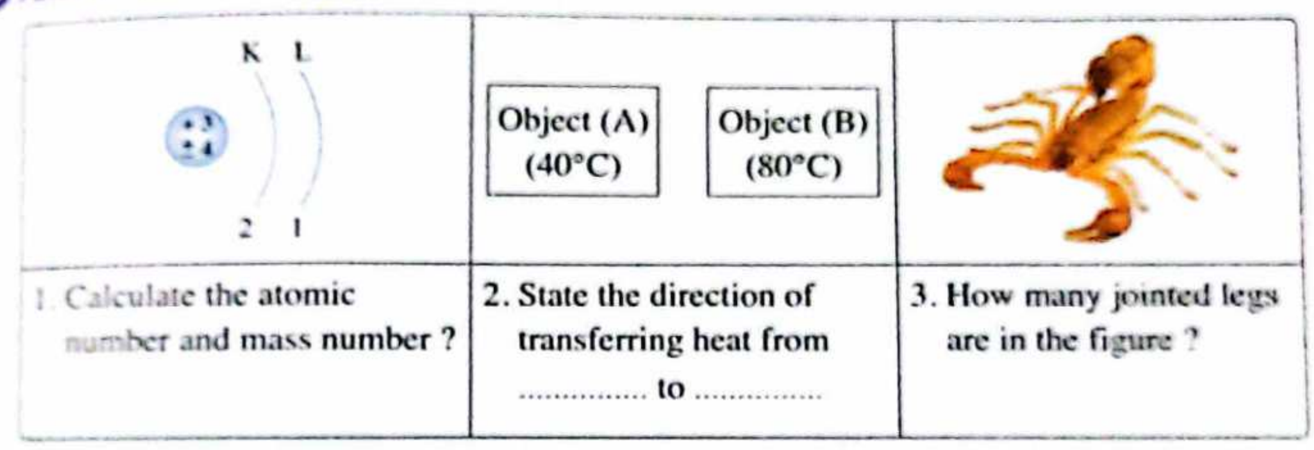
1. Mating between an african man and an asian woman.
2. Chameleon goes from green area to sandy area.

Question 4

A Correct the underlined words :

1. The proton of the atom is **negatively** charged.
2. **Genus** is the basic unit of classification of living organisms.
3. Amoeba is an example of **multi-cellular** organisms.
4. The molecules of a compound consisting of **similar** atoms.

B Answer the following questions :



1. Calculate the atomic number and mass number ?	2. State the direction of transferring heat from .... to	3. How many jointed legs are in the figure ?

C What do you expect ... ?

The beaks of hoopoe and hawk are mutually exchanged.

18 Behira Governorate — Science inspectorate

Answer the following questions :

Question 1



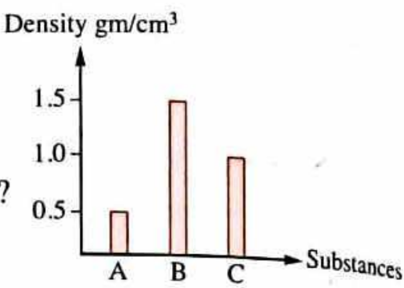
A Complete the following statements :

1. The energy level (M) saturated by .... electrons, which an be calculated from the relation ....
2. Ammonia molecule is composed of three .... atoms, and one .... atom.
3. .... is the ability to do work and its measuring unit is ....
4. Quail birds are adapted to the environmental conditions by .... while jerboa is adapted by ....

B Write one example for each of the following :

1. Transfer heat by convection.
2. An alloy used in making jewels.
3. Soft substance at room temperature.
4. Device used to change electric energy into light energy.

C **The opposite graph represents the density of substances (A, B and C), study the graph then Answer the following :**



1. Which material sinks in water ? And why ?
2. Calculate the volume of 100 gm sample of material (A) ?

Question 2

A **Choose the correct answer :**

1. In solar heater, the solar energy is converted into ....
   a. light. b. electric. c. heat. d. kinetic.
2. The electrons of potassium atom ($_{19}K$) are distributed in .... energy level(s).
   a. one b. two c. three d. four
3. The symbol of sulphur element is ....
   a. (Ag) b. (S) c. (Si) d. (Hg)
4. The plant which reproduce by spores is ....
   a. pine. b. bean. c. vougheir. d. wheat.

B **Write the number which indicates each of the following :**

1. Number of neutrons in nucleus $^{24}_{12}Mg$ atom.
2. Number of electron in outermost energy level of $^{40}_{20}Ca$ atom.
3. Number of jointed legs of ant.
4. Number of incisors in lower jaw of rodents

C **A ball was kicked up vertically to reach 15 meters high before returning back. If the weight of the ball is 10 newton, calculate its kinetic energy at :**

1. The highest point. 2. The ground.

Question 3

A **Write the scientific term of the following :**

1. The basic classification unit for living organisms.
2. The temperature at which a solid substance starts to change into a liquid one.
3. The smallest particle that can share in the chemical reaction.
4. The way be which heat is transferred through solid.

B **Choose a phrase from column (B) which match another from column (A) :**

(A)	(B)
1. Simple pendulum	a. zinc rod is consider the negative pole.
2. Atomic number	b. a molecule which is formed of similar atoms.
3. Element molecule	c. change chemical energy into kinetic energy.
4. In the simple electric cell	d. change potential energy into kinetic energy and vice versa.
	e. the number of positive protons in the nucleus of an atom.

C **Give one difference between :**

Maize plant and pine plant.

Question 4

A **Choose the odd word, then write the scientific term of the other :**

1. Ammonia – Water – Aluminium – Hydrogen chloride.
2. Solar stove – Solar heater – Solar cell – Solar oven.
3. Octopus – Spider – Jellyfish – Earthworm.
4. Acidic solution – Sugary solution – Salt solution – Alkaline solution.

B **Correct the underlined words :**

1. The nucleus has **neutral** charge.
2. The intermolecular forces between **gaseous** molecules is strong.
3. The networks of wireless transmitters of cellular phones cause **chemical pollution**.
4. The ends of horse are modified into **thick flat pad** to run on rocky soil.

C **Give a reason for :** Some animals undergo hibernation.

19 Suez Governorate

Suez Directorate

Answer the following questions :

Question 1

A **Complete the following statements :**

1. The liquid element its molecule is composed of one atom is ...., while that is composed of two atoms is ....
2. In the dynamo, ... energy changes into .... energy.
3. The cockroach belongs to ...., whereas the scorpion belongs to ....
4. Silver symbol is .... whereas sodium symbol is ....

B **Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Heat transfers through liquids by	a. excited atom.
2. Electric lamp	b. helium.
3. From inert gases	c. convection and radiation.
4. The atom that gains a quantum of energy	d. is a source of light energy.
	e. is a source of electric energy.
	f. convection.

1. .... 2. .... 3. .... 4. ....

C When a piece of iron its mass 156 gm, is put in a graduated cylinder containing 100 cm^3 of water the reading becomes 120 cm^3 calculate the density of iron.

Question 2

A Choose the correct answer :

1. The number of energy levels in the heaviest atom is ....
   a. 8 b. 7 c. 32 d. 18
2. Distance among molecules are very small in ....
   a. water. b. copper. c. hydrogen. d. oil.
3. An object of 20 N weight and it is placed at a height of 5 m, so its potential energy is .... joule.
   a. 50 b. 150 c. 100 d. 200
4. .... is from the animals that make hibernation in winter.
   a. Frog b. Jerboa c. Desert snail d. Sloth

B What happen if ... ?

1. Using water in putting out petrol fires.
2. The electron gains a quantum of energy.
3. If the front limbs of the bat are not modified into wings.
4. The front teeth of hedgehog are not extending outwards.

C From the opposite figure answer the following questions :

1. Mention the name of the opposite device.
2. Label the fig.
3. Mention the idea of operation.

Question 3

A Write the scientific term :

1. Number of positive protons in nucleus of the atom.
2. The plants which devour insects to get protein.
3. The way of transferring the heat through solids.
4. An alloy which is used in making heating coils.

B Correct the underlined words :

1. The networks of cellular phone cause **noise** pollution.
2. Work = force × **time**.
3. **Gold** is very active metal.
4. **Boiling** point is the temperature at which matter changes from solid into liquid state.

C Your classmate has seen a bird, he doesn't know this bird's name but he managed to :
Describe it as a bird with a sharp beak and the legs end in fingers with strong claws.
According to your classmate story, answer the following questions :

1. What is the type of adaptation in both the beak and leg of this bird ?
2. How many fingers are in each leg ?
3. What type of food does this bird feed on ?

Question 4

A Give one difference between each of the following :

1. Beans and wheat.
2. Neutron and proton.
3. Element and compound.
4. Mechanical energy and heat energy.

B Give one example showing each of the following :

1. Micro-organisms.
2. A solution that is good conductor of electricity.
3. Alloy used in making the jewelry industry.
4. Soft material at normal temperature.

C Give reasons for :

1. Some animals undergo hibernation.
2. Camel's legs end with broad pad.

20 Minia Governorate — St. Mark Schools

Answer the following questions :

Question 1

A Choose the correct answer :

1. The attraction force is very weak in ....
   a. iron. b. milk. c. oxygen. d. oil.
2. Chemical energy can be stored in ....
   a. radio. b. car battery. c. car lamp. d. piano.
3. The fourth energy level in calcium $_{20}Ca$ is filled with .... electrons.
   a. 7 b. 8 c. 2 d. 5
4. An object of mass 4 kg is moving at a speed of 8 m/sec has a kinetic energy equal .... joule.
   a. 120 b. 128 c. 130 d. 190
5. The plant that reproduces by spores is ....
   a. pine. b. bean. c. vougheir. d. maize.
6. All of following solutions conduct electricity except .... solutions.
   a. salt b. acidic c. alkaline d. sugary

B Write the symbol of the following :

1. Sulphur.
2. Iron.
3. Sodium.
4. Aluminium.

C Give reasons for the following :

1. The atom is electrically neutral.
2. A piece of wood floats on water surface.
3. Hedgehogs have front teeth extending outwards.
4. The freezer is found at the top of the fridge.

Question 2

A Write the scientific term of each of the following :

1. The product results from combination of atoms of different elements with constant weight ratios.
2. The sum of numbers of protons and neutrons in the nucleus of an atom.
3. The way by which the heat is transferred through copper or metallic wires.
4. The behaviour that some animals do by hiding in humid burrows to avoid the extreme rise in temperature in summer.
5. It is the ability to do work or to make a change.
6. The branch of biology that searches for similarities and differences among living organisms.

B Write the electronic configuration of the following :

1. $^{23}_{11}Na$
2. $^{40}_{18}Ar$
3. $^{14}_{7}N$
4. $^{7}_{3}Li$

C Mention one difference between :

1. Insects and arachnids.
2. Rodents and lagomorphs.

Question 3

A Give an example for each of the following :

1. An alloy that is used in making jewels.
2. A very active metal.
3. A liquid element composed of one atom.
4. An animal which doesn't have any support.
5. Hibernation in amphibian.
6. A micro-organism.

B Mention the changes of energy in the following :

1. Solar cell.
2. Electric heater.
3. Simple electric cell.
4. Radio cassette.
5. Dynamo.

Question 4

A Complete the following statements :

1. Matter is composed of small building units called .... , while these units are composed of smaller units called ....
2. Noble gases have eight electrons in the outermost energy level except .... which has .... electrons.

3. Heat is transferred through gases by .... and ....

4. .... and .... belong to teethless mammals.

B Problem :

When a piece of red copper of mass 44 gm. is put in a graduated cylinder containing 100 cm^3 of water, the reading of the cylinder becomes 105 cm^3 calculate the density of red copper.

C Choose the odd word out, then write scientific term of the others :

1. Ice – Wood – Iron – Cork.
2. Dieonia – Drosera – Elodea – Halophila.
3. Bean – Corn – Pine – Wheat.
4. Lion – Tiger – Sloth – Wolf.

21 Sohag Governorate — El-Manahel Private Language School

Answer the following questions :

Question 1

A Complete the following sentences :

1. Some solutions are good conductors of electricity such as .... while some solutions are bad conductors of electricity such as ....
2. The liquid element whose molecule is composed of one atom is .... while the liquid element whose molecule is composed of two atoms is ....
3. Heat transfer by radiation takes place through .... medium and .... medium.
4. The legs of the horse end in .... to help it run on rocky soil while the legs of the camel end in .... to help it walk on sand.
5. The energy level "K" is saturated with .... electrons while energy level "N" is saturated with .... electrons.

B Give reasons for :

1. The motion of the children's swing is like that of the pendulum.
2. Metallic spare parts of cars are covered with grease.

C Calculate the density of a piece of metal its mass is 78 gm and its volume is 10 cm^3.

Question 2

A Choose the correct answer :

1. .... is from substances that float on the surface of the water.
   a. Iron b. Cork c. Copper d. Aluminium
2. The symbol of chlorine atom is $^{35}_{17}Cl$ then the number of neutrons equals ....
   a. 18 b. 35 c. 17 d. 7

3. The potential energy of an object equals zero ....
   a. on reaching the ground. b. when it reaches the maximum height.
   c. when its velocity increases. d. when its velocity decreases.
4. The electric energy change into kinetic energy in ....
   a. electric lamp. b. cell phone. c. electric fan. d. electric bell.
5. .... from gymnosperms.
   a. Wheat b. Maize c. Vougheir d. Pine
6. The front teeth extend outward in ....
   a. hedgehog. b. sloth. c. tiger. d. rabbit.

B Mention one importance (use) of each of the following :

1. Nickel-chrome alloy.
2. Sharp beaks in predators.
3. Paddles in whale.
4. Solar cells.

C Compare between :

1. Oxygen molecule and neon molecule (according to : the number of atoms).
2. Mosquito and scorpion (according to : the number of legs).

Question 3

A Write the scientific term :

1. Element that reacts instantly with oxygen when expose to humid air.
2. A molecule of a compound composed of two hydrogen atoms and an oxygen atom.
3. The result of multiplying displacement × force.
4. It is a form of energy which transfers from a higher temperature object to a lower temperature object.
5. It is the behaviour through which animals stop their most vital activity to avoid the extreme rise in temperature in summer.

B Mention one example of each of the following :

1. A substance with a low melting point.
2. Insectivorous plant.
3. A renewable source of energy.
4. Camouflage in insects.

C A stone of 5 kg in mass falls from a height of 8 m. calculate the potential and kinetic energies at the start of falling. (acceleration due gravity is 10 m/s^2)

Question 4

A Put (✓) or (✗) :

1. The intermolecular forces between solid molecules is non existent. ( )
2. The rule ($2n^2$) is not applied on the energy level "M". ( )
3. Secretion of poison in snakes is behavioural adaptation. ( )

4. Amoeba is from micro-organisms. ( )
5. The solid molecules vibrate in a simple vibratory motion. ( )
6. The temperature of bodies increases by increasing their speed. ( )

B What is meant by ... ?

1. Element.
2. The conservation law of energy.

C Write the electronic configuration of :

1. $_{3}Li$
2. $_{7}N$
3. $_{18}Ar$
4. $_{20}Ca$

22 Qena Governorate

Science Inspectorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The melting point is the temperature at which matter begins to change from a .... state to a .... state.
2. Hydrogen molecule is composed of .... atom(s), while argon molecule is composed of .... atom(s).
3. Potential energy increases by increasing the .... of the body and its .... from the ground.
4. The whale front limbs are modified into .... to take the role of ....

B Complete the following table :

	Number of neutrons	Electronic configuration
$^{7}_{3}Li$	.... (1)	.... (2) ....
$^{24}_{12}Mg$	.... (3)	.... (4) ....

C What is meant by ... ? Heat energy.

Question 2

A Write the scientific term :

1. The result of combination between two or more atoms of different elements with constant weight ratios.
2. The number of positive protons in the nucleus of atom.
3. The way by which heat is transferred from the Sun to the Earth.
4. The behaviour that some animals do by hiding in burrows to avoid the low temperature in winter.

B **Cross out the odd word then write scientific term for the other words :**

1. Lion – Dogs – Tiger – Armadillo.
2. Sugar solution – Acidic solution – Salt solution – Alkaline solution.
3. Oxygen – Ammonia – Bromine – Carbon.
4. Dieonea – Drosera – Amoeba – Halophila.

C **Someone kicked a ball of mass 0.5 kg and weight is 5 newton vertically upward at a height of 4 m, its speed was 10 m/sec, calculate the potential energy and the kinetic energy at 4 m height.**

Question 3

A **Choose the correct answer :**

1. The attraction force among solid molecules are ....
   a. strong. b. weak. c. moderate. d. almost not found.
2. Electric energy is converted into kinetic energy in ....
   a. electric lamp. b. electric fan. c. electric bell. d. electric heater.
3. .... is an example of plants that reproduce by spores.
   a. Wheat b. Vougheir c. Pine d. Maize
4. .... bird migrates in the winter.
   a. Quail b. Hawk c. Duck d. Eagle

B **Correct the underlined words :**

1. The energy level **"K"** has the highest energy in the atom.
2. Insectivorous plants cannot absorb the nitrogenous substances that make **fats**.
3. Mercury is **diatomic** element.
4. Heat transfers through liquids by **conduction**.

C **Give a reason for the following :**

A piece of wood floats on water surface while a piece of lead sinks in it.

Question 4

A **Put (✓) in front of the right statement and (✗) in front of the wrong ones :**

1. Cold air rises up, while hot air falls down. ( )
2. Ducks and geese have palm legs to help them in swimming. ( )
3. Molecules of same substance are different from each other. ( )
4. Human belongs to one species although he differs in color or race or home. ( )

B **Write the chemical symbols of the following :**

1. Sodium. 2. Iron. 3. Sulphur. 4. Silver.

C **Compare between insects and arachnids,** (According to the number of legs).

23 Aswan Governorate — ALMostaqbal Language School

Answer the following questions :

Question 1

A Complete the following statements :

1. An alloy of .... is used in making jewels while an alloy of .... is used in making heaters coils.
2. The liquid element whose molecule is composed of one atom is .... while that composed of two atoms is ....
3. Some plants have large-sized leaves such as .... and some has small-sized leaves such as ....
4. .... and .... are examples for insectivorous.

B Mention the change of energy in the following :

Technological applications	Change of energy	
	from	to
1. Electric fan		
2. Electric lamp		
3. Electric bell		
4. Solar heater		

C Problem :

Find the weight of an object of potential energy 88 joule when found at a height 11 m.

Question 2

A Choose the correct answer :

1. .... are from the animals which don't have a body support.
   a. Reptiles b. Snails c. Jellyfish d. Cartilaginous fish
2. Heat is transferred through solids by ....
   a. conduction and convection. b. radiation only.
   c. radiation and convection. d. conduction only.
3. As an object falls downwards ....
   a. the potential energy increases. b. the kinetic energy increases.
   c. the mechanical energy is lost. d. the speed of the object decreases.
4. The taste property is a distinguishing factor between ....
   a. milk and honey. b. wood and plastic.
   c. silver and gold. d. perfume and vinegar.

B Write the symbols of the following elements :

1. Sodium. 2. Nitrogen. 3. Aluminium. 4. Phosphorus.

C Give a reason for :

When adding an amount of table salt to water, it disappears after a time.

Question 3

A Write the scientific term of each of the following :

1. The product resulted from combination of atoms of different elements with constant weight ratios.
2. Energy needed or lost to transfer an electron from an energy level to another.
3. A form of energy which is transferred from the object of higher temperature to that of lower temperature.
4. The temperature at which a substance changes from the liquid state to the gaseous state.

B Write the electronic configuration of the following elements :

1. $^{4}_{2}He$ 2. $^{24}_{12}Mg$ 3. $^{40}_{18}Ar$ 4. $^{32}_{16}S$

C What do you expect in each of the following cases ... ?

The beaks of a hoopoe and a hawk are mutually exchanged.

Question 4

A Put (✓) or (✗) in front of the following sentences :

1. Molecules of the same substance are different from each other. ( )
2. The molecules of solid substances vibrate in a simple vibratory motion. ( )
3. Cool air rises up, but hot air falls down. ( )
4. The motion of gaseous molecules is limited. ( )

B State one difference between each of the following :

1. A rabbit and a squirrel. 2. Beans plant and wheat plant.

C What is meant by the following ... ?

Mechanical energy of an object is 100 joule.

24 South Sinai Governorate

El-Tur Directorate

Answer the following questions :

Question 1

A Write scientific term :

1. The smallest part of matter which can exist freely.
2. Plants can't be distinguished into roots, stems and leaves.

3. Metals used for painting iron to protect it from rusting.
4. Energy is neither created nor destroyed, but it is converted from one form to another.

B Give an example of each the following :

1. A compound molecule that consists of two atoms.
2. Mammal animal have teeth extending outwards.
3. Permanent resource of energy.
4. Functional adaptation.

C An atom of element have number of electrons in the third level equal the number of electrons that have in the first energy level :

1. Write the electronic configuration.
2. Determine its atomic number.

Question 2

A Complete the following :

1. The symbol of mercury .... , while (Au) is the symbol of ....
2. The electric current in the simple electric cell transfers from .... plate to .... plate
3. The number of atoms in bromine molecule is .... while the number of atoms in water molecule is ....
4. .... and .... are examples of insects adapted by camouflage.

B Compare between :

1. **Rodents and lagomorphs** (according to the number of teeth – examples).
2. **Solid objects and gaseous objects** (according to the way of heat transfer – the motion of molecules).

C A metallic ball has mass 3 kg. was thrown up to reach height 7 meter, calculate the potential energy of the ball at maximum height. "the acceleration due to gravity = 10 m/sec^2".

Question 3

A Correct the underlined words :

1. Heat transfers by **conduction** doesn't need for a material medium.
2. **Mass** is the ability to do work.
3. Horse limbs end by **sharp claws** to help the horse run on the rocky soil.
4. From solutions that are bad conductor of electricity **table salt** solution.

B Mention one importance for each of the following :

1. Nickel-chrome alloy.
2. Palm legs of ducks.
3. Solar cells.
4. Hibernation.

C What is meant by ... ?

1. The density of Iron = 7.8 gm/cm^3
2. The kinetic energy of a body = 90 joule.

Question 4

A What happens when ... ?

1. The atom gains a quantum of energy.
2. The beak of hawks and vulture are long and thin.
3. Putting the electric heater on the ground.
4. Using of water in putting out petrol fires.

B Choose the correct answer :

1. .... is from gymnospmers plants.
   a. Bean b. Pine c. Pea d. Maize
2. Electromagnetic pollution is resulted from ....
   a. the network of cellular phone. b. drilling machines.
   c. pesticides. d. the explosions.
3. Scientist who used the species as a fundamental unit of natural classifying system is ....
   a. Newton. b. Planck. c. Linnaeus. d. Einstein.
4. Putting of nut fastener its temperature 90°C in a cup of water its temperature 30°C, the temperature of water becomes ....
   a. 90°C. b. 120°C. c. 50°C. d. 30°C.

C Write the mathematical relationship used to calculate the following :

1. The work.
2. The number of neutrons in the nucleus.

25 New Valley Governorate

El-Kharga Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The liquid element its molecule is composed of one atom is .... , while that is composed of two atoms is ....
2. On the Earth's surface, potential energy of a moving object equals .... while its kinetic energy equals the .... energy.
3. The networks of wireless transmitters of cellular phone cause .... pollution, but car exhaust cause .... pollution.
4. Heat transfer from liquids by .... , while through space by ....
5. .... is from the plants that reproduce by formation of spores, while .... is from the plants that reproduce by formation of seeds inside cone.

B Mention one use or function :

1. Nickel-chrome alloy.
2. The sharp and crooked beaks in hawk.

C A ball was launched upward and vertically at speed 3 m/sec up to a height 4 m, calculate the mechanical energy of the ball if its weight is 5 newton and has a mass of 0.5 kg.

Question 2

A Choose the correct answer :

1. A piece of lead of mass 114 gm occupies 10 cm^3, its density is .... gm/cm^3.
   a. 14 b. 124 c. 11.4 d. 1
2. A substance is solid and can't be soften by heating ....
   a. copper. b. wood. c. aluminium. d. iron.
3. An element has 2 electrons in the (M) level, so its atomic number is ....
   a. 8 b. 10 c. 12 d. 14
4. Secreting sweat by skin is considered .... adaptation.
   a. structural b. functional c. behavioural d. anatomical
5. From animals with internal support is ....
   a. octopus. b. fish. c. snail. d. jellyfish.
6. Chemical energy can be stored in ....
   a. car lamp. b. car battery. c. stretched spring. d. pendulum.
7. Scorpion belongs to ....
   a. insects. b. arachnids. c. myriapods. d. mammals.
8. In solar heater, solar energy is converted into .... energy.
   a. light b. electric c. heat d. sound

B Give a reason for :

Water isn't used to put out petrol fires.

C Write the symbol of each of the following :

1. Silver. 2. Chlorine. 3. Lead. 4. Sodium.

Question 3

A Write the scientific term :

1. The branch of biology that searches for the similarities and differences among living organisms.
2. A fundamental building unit of matter which can share in the chemical reaction.
3. It is the amount of energy lost or gained by an electron when it transfers from one energy level to another.
4. The way of transferring heat through solids.

5. The plants which devour insects to get protein.
6. The work done during the motion of an object.
7. It is a form of energy which transfers from a higher temperature object to lower temperature object.
8. The gases that don't take part in the chemical reaction.

B What happens when ... ?

Iron nail moisten by water is exposed to air for several days.

C Mention one example :

1. A teethless animal.
2. A permanent source of energy.

Question 4

A What is meant by ... ?

1. Law of energy conservation.
2. Camouflage.

B Mention one difference between :

1. Water molecule	Nitrogen molecule
....	....
2. Squirrel	**Rabbit**
....	....
3. Intermolecular force in solids	**Intermolecular force in gases**
....	....

C Write the electronic configuration of :

1. $^{24}_{12}Mg$
2. $^{20}_{10}Ne$

Then determine each of the following :

1. Number of neutrons.
2. Chemical activity.

	1. $^{24}_{12}Mg$	2. $^{20}_{10}Ne$
1. Number of neutrons :		
2. Chemical activity :		

Final Examinations 2021

PART 3



Final Examinations of some Governorates.

PART 3

1 Cairo Governorate — St. Joseph's Language School

Answer the following questions :

Question 1

A Complete the following statements :

1. In solar cell .... energy changes into .... energy.
2. The monoatomic liquid is .... , while .... is diatomic liquid.
3. The symbol of sodium is .... , while that of gold is ....
4. Heat transfers through solids by .... , while through liquids by ....

B Mention one difference between :

1. The electron and the proton.
2. Insects and arachnids.

C Problem :

An object whose mass is 2 kg is moving at a speed of 5 m/sec. Calculate its kinetic energy.

Question 2

A Put (✓) or (✗) :

1. An alloy of nickel chrome is used in making heating coils. ( )
2. Birds migration is an example of structural adaptation. ( )
3. Pine plant is from an angiosperms plants. ( )
4. The energy level (N) is saturated by 32 electrons. ( )
5. The ammonia molecule consists of one nitrogen atom and three hydrogen atoms. ( )
6. Sugary solution is a good conductor of electricity. ( )

B Write the electronic configuration of :

1. ${}^{35}_{17}Cl$
2. ${}^{20}_{10}Ne$
3. ${}^{16}_{8}O$

C Problem :

A piece of iron, whose mass is 78 gm is placed in a measuring cylinder containing 40 cm^3 of water so water rises up to 50 cm^3. Calculate the density of iron.

Question 3

A Give reasons for :

1. The freezer is placed at the top of the fridge.
2. Inert gases are chemically inactive elements.
3. The atom is electrically neutral.
4. Some animals hibernate in winter.

B Choose the correct answer :

1. The attraction forces among solid molecules are ....
   a. strong. b. weak. c. almost not found.
2. The front limbs of whale are modified into ....
   a. legs. b. wings. c. paddles.
3. Kinetic energy is changed in electric energy in ....
   a. motor. b. dynamo. c. simple cell.
4. .... is from micro-organisms.
   a. Drosera b. Euglena c. Scolopendra

C Define :

1. Melting point.
2. Potential energy.

Question 4

A Write the scientific term :

1. The ability to do work or to make a change.
2. The smallest building unit of matter which can exist freely.
3. The number of protons inside the nucleus.
4. The ability of some animals to change their colour to stimulate the environment.

B Give an example for :

1. Very active metal.
2. Dicotyledon plant.
3. A rodent animal.
4. A solid substance which is soft at room temperature.

C What happens when ... ?

1. You add 50 cm^3 of ethyl alcohol to 100 cm^3 of water.
2. The electron gains a quantum of energy.

2 Cairo Governorate — Holy Family School

Answer the following questions :

Question 

A Give one example for :

1. A substance that has low melting point.
2. A plant isn't distinguished into roots, leaves or stems.
3. A bird feeds on fish.
4. A solution that is good conductor of electricity.

PART 3

B Complete the following sentences :

1. The nucleus of an atom contains positive .... and neutral ....
2. Copper-gold alloy is used in making ....
3. In the dry cell, ... energy changes into electric energy.
4. At highest point of the pendulum, the .... energy is maximum but .... energy is zero.

C Give reasons for :

1. Oil floats on water surface.
2. Argon ($_{18}Ar$) is inert gas that doesn't enter any chemical reaction.

Question 2

A Choose the correct answer :

1. .... converts electric energy into kinetic energy.
   a. Electric heater b. Electric fan c. Car engine d. Dynamo
2. The intermolecular spaces in iron is .... that in water.
   a. less than b. more than c. equal d. no correct answer
3. The symbol of .... element is (Ag).
   a. gold b. silver c. mercury d. copper
4. Birds migration is considered .... adaptation.
   a. structural b. behavioural c. functional d. (a) and (b)
5. .... is a micro-organism.
   a. Ant b. Amoeba c. Spider d. Snail
6. Heat transfers through liquids by ....
   a. conduction. b. convection. c. radiation. d. (b) and (c).
7. .... are animals with external support.
   a. Reptiles b. Snails c. Jellyfishes d. Fishes
8. .... is a permanent source of energy.
   a. Wind b. Coal c. The Sun d. Water

B What happens if ... ?

The object mass is doubled ? (related to its kinetic energy).

C Redraw the table then complete it :

P.O.C.	Insect	Arachnid
Example :	....	....
Number of jointed legs :	.... pairs	.... pairs



Question 3

A Write the scientific term :

1. The basic classification unit of the living organisms.
2. The sum of potential energy and kinetic energy.
3. The spaces among molecules.
4. Gases that their molecules are composed of one atom only.
5. Change of matter from solid state into liquid state.

B Correct the underlined words :

1. Ammonia molecule is composed of **three** atom(s).
2. Insectivorous plants absorb nitrogen to form **fats**.
3. Celebration balloons are filled with hydrogen or **oxygen** gases.
4. The rule ($2n^2$) is used to fill the energy levels with **protons**.
5. Friction generates (produces) **light** energy.

C Redraw the table then complete it :

P.O.C	Energy used	Energy produced
Photosynthesis :	....	....
Dry cell :	....	....

Question 4

A Cross out the odd word :

1. Vougheir – Bean – Pea – Wheat.
2. $_{11}Na$ – $_{19}K$ – $_{12}Mg$ – $_{3}Li$
3. Wood – Cork – Ice – Nail.
4. Evaporation – Hibernation – Aestivation – Birds migration.

B Answer the following :

In the following atom ($^{27}_{13}Al$).

1. Draw the electronic configuration.	....
2. The atomic number =	....
3. The mass number =	....
4. Number of neutrons =	....

C What happens when ... ? Hot object touches a cold object.

PART 3

3 Cairo Governorate — Al-Farouk Islamic Language School

Answer the following questions :



Question 1

A Write the scientific term for each of the following :

1. Ability to do work or cause change.
2. The total number of protons and neutrons inside the nucleus.
3. Animal that is considered an example for structural, functional and behavioural adaptations.
4. The smallest unit of matter construction which reacts chemically.

B Choose the correct answer :

1. Heat transfers by radiation through ....
   a. liquids only. b. gases only.
   c. material media and non-material ones. d. metals only.
2. From animals with internal support ....
   a. octopus. b. fish. c. snail. d. jellyfish.
3. Silver is symbolized by ....
   a. Hg b. S c. Si d. Ag
4. Chemical energy can be stored in ....
   a. car battery. b. stretched spring.
   c. raising a load upwards. d. car lamps.
5. .... is an example for plants that reproduce by spores.
   a. Pine b. Bean c. Vougheir d. Wheat
6. An object of mass 2 kg is moving at a speed of 4 m/s, has kinetic energy ....
   a. 16 J. b. 64 J. c. 32 J. d. 128 J.

C Copy the following table at your answer sheet, then complete it :

Technological applications	Resource of energy Permanent/Non-renewable	Effect on environment Polluted/Non-polluted
1. Coal fire	....	....
2. Petroleum car engine	....	....
3. Gas stove	....	....
4. Solar heater	....	....

D Cross out the unsuitable word, then write the relation between the other words :

1. Bean – Pea – Maize – Pine – Wheat.
2. Petroleum – Wood – Cork – Iron.
3. Locust – Mosquito – Spider – Cockroach – Fly.



Question 2

A Complete the following statements :

1. The front limbs of whale are modified into .... to help it to ....
2. When a body is raised up, the potential energy ...., while the kinetic energy ....
3. .... and .... are examples for insectivorous plants.

B Solve the following problem (Write all laws and measuring units used) :

In an experiment to determine a liquid density, the following results are recorded :

– The mass of an empty cylinder = 65 gm.

– The mass of the cylinder containing liquid = 155 gm.

– The volume of the liquid measured by a graduated cylinder = 100 cm^3. **Calculate liquid density.**

C "Each modification is for specific function" In a table, write the function of each of the following :

1. Front teeth of hedgehog.
2. Wide indented beak of duck.
3. Pads of camel.
4. Beaks of hawks.

D What happens in each of the following cases ... ?

1. Leaving a piece of iron exposed to moist air for a period of time.
2. Friction of the bicycle wheels to a rough surface.
3. When energy of an electron becomes larger than the energy of the level in which it rotates by an amount of energy equals a quantum.
4. A ball is raised upwards, then it is left to fall downwards.



Question 3

A Give reasons for each of the following :

1. Atom is electrically neutral.
2. Individuals of the same species have different characters.
3. The heater is placed on the ground.
4. Some species of birds migrate from their original habitats in winter.



B Copy the following table at your answer sheet, then complete it :

Points of comparison	Ice	Water	Water vapour
1. Keeping shape and volume:	....	....	....
2. Intermolecular force:	....	....	....

C Rewrite the underlined words in following sentences after correcting :

1. **Neutrons** are positively charged.
2. **Fuel** energy is considered from the clean energy resources.
3. **Bean** plant is considered from monocotyledons.
4. **Oxygen** gas is an inert gas that couldn't share in chemical reactions at normal conditions.

D Choose from (B) what suits from (A) :

(A)	(B)
1. Density measuring unit	a. conduction.
2. Travelling of solar heat to the Earth	b. cm^3.
3. Substances conduct heat and electricity	c. radiation.
4. Factors affecting kinetic energy of an object	d. copper and iron.
5. Volume measuring unit	e. gm.
6. Simple cell is an example for energy transformation	f. gm/cm^3.
	g. wood and plastic.
	h. object's weight and its height.
	i. from chemical to electric.
	j. object's mass and its speed.
	k. from electric to chemical.
	l. cm^2.

Question 4

A Give an example showing each of the following :

1. Vertebrate animal.
2. Teethless mammals.
3. Animal makes hibernation.
4. Camouflage in insects.
5. Animal makes aestivation.

B Copy the following table at your answer sheet, then complete it :

Element	Electronic configuration			
	K	L	M	N
$^{23}_{11}Na$	....	....	....	....
$^{24}_{12}Mg$	....	....	....	....

C Solve the following problem :

Find the potential energy of an object its mass is 5 kg when found at height 10 m from ground, consider gravity acceleration = 10 m/s^2.

D The figures below represent the electronic configuration of atoms of some elements :

(A) +8, ±8 : 2, 6 (B) +12, ±12 : 2, 8, 2 (C) +17, ±18 : 2, 8, 7

Study these figures well, then determine each of the following :

Find	Atom (A)	Atom (B)	Atom (C)
Atomic number of each atom :	....	....	....
Mass number of each atom :	....	....	....

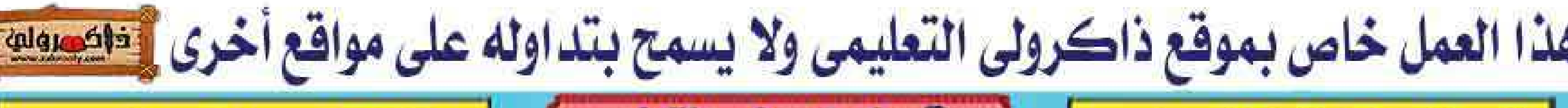
4 Cairo Governorate — Al-Waha Language School

Answer the following questions :



A Write the scientific term :

1. Negatively charged particles of negligible mass revolve around the nucleus.
2. Organisms that can't be seen by the naked eye and they spread in air, water and soil.
3. The way by which the heat is transferred through gases and liquids.
4. The behaviour that frogs and toads do in the winter to avoid the low temperature.
5. The ability of some living organisms to be hidden from their enemies.
6. The mass of unit volume of the substance.
7. The gases which their molecules consist of one atom.
8. A group of animals that have one pair of incisors in each jaw.
9. Energy is neither created nor destroyed, but it is converted from one form to another.



PART 3

10. An alloy used in making jewels.
11. The monoatomic liquid molecule.
12. The temperature at which a substance changes from the liquid state to gaseous state.

B **If a ball : Thrown upwards to reach 10 metres and its weight is 5 newton. Calculate the potential energy at :**

1. The highest point.
2. The ground.

Question 2

A **Complete the following sentences :**

1. Energy is the ability to do .... and its measuring unit is ....
2. The molecule of water consists of .... and ....
3. Insects have .... pairs of jointed legs as ....
4. Plants may carry large-sized leaves such as .... and some has small-sized leaves such as ....
5. In the melting process, solid molecules .... energy and change into .... state.
6. Birds migration is .... adapation.
7. The matter is composed of small units called .... , while these units are consisted of smaller units called ....
8. For a truck and a small car moving at the same speed, kinetic energy of the truck is .... than the kinetic energey of the car.
9. Movement of particles and friction between them produce .... energy.
10. .... is the main source of energy on the Earth's surface and it is a permanent energy resource.
11. The beaks of birds that feed on aquatic snails and worms are .... and ....
12. The energy stored in the food is .... energy, while .... energy is produced from the dry cell.

B **Give reasons for :**

1. Cooking pans are made of aluminium, while their handles are made of plastic.
2. It is easy to divide an amount of water into smaller parts.
3. No changes happen in the potential energy when the objects move horizontally.
4. Some plants pounce (hunt) and digest insects.

Question 3

A **Put (✓) or (✗) :**

1. Copper is a good conductor of electricity. ( )
2. The colour is used to differentiate between sugar and salt. ( )
3. Bean is considered from monocotyledon plants. ( )

4. Scorpion and armadillo are insects. ( )
5. The temperature of particles decreases when their movement increases. ( )
6. Hot water is lighter than the cold water. ( )
7. Reptiles have an external support. ( )

B Write the symbols of the following elements :

1. Calcium. 2. Aluminium. 3. Nitrogen.
4. Phosphorus. 5. Silver. 6. Hydrogen.

C If the density of alcohol is 0.8 gm/cm^3, find the volume if its mass is 88 gram.

Question 4

A Correct the underlined words :

1. Oxygen molecule consists of **three atoms**.
2. The molecule of a compound consists of **similar** atoms.
3. Number of **protons** = Mass number – Atomic number.

B Mention the changes of energy in the following :

Examples	Energy used	Energy produced
1. Solar heater:	....	....
2. Photosynthesis:	....	....

C State a difference between each of the following :

1. A rabbit and a squirrel.
2. Pea plant and wheat plant.
3. The camel's pad and the horse's hoof.

D Write the electronic configuration of the following elements and mention the type of each one (active or inactive) :

a. $^{7}_{3}Li$ b. $^{24}_{12}Mg$ c. $^{39}_{19}K$ b. $^{20}_{10}Ne$

5 Cairo Governorate — Gaber El-Ansary Language School

Answer the following questions :

Question 1

A Complete the following :

1. Density is the .... of unit volume of the matter and its unit is ....
2. Hydrogen molecule consists of .... atoms, while argon molecule consists of .... atoms.






PART 3

3. .... is the ability to do work and its measuring unit is ....
4. In photosynthesis process .... energy changes into .... energy.
5. The cockroach belongs to .... , while the scorpion belongs to ....

B Write the chemical symbol for :

1. Sodium. 2. Aluminium. 3. Iron. 4. Chlorine.

Question 2

A Write the scientific term :

1. The ability of some body organs and tissues to do a certain function.
2. The way by which heat is transferred from the Sun to the Earth.
3. Energy is neither created nor destroyed but it is changed from one form to another.
4. Imaginary places around the nucleus in which the electrons move according to their energies.
5. The temperature at which liquid starts to change into gas.
6. The work done during the motion of an object.

B Problem :

Find the potential energy of an object its mass is 7 kg when it is found at a height of 10 m from the ground. [$g = 10\ m/s^2$]

Question 3

A Put (✓) or (✗) :

1. The cold air rises up, while hot air falls down. ( )
2. The motion of gaseous molecule is limited. ( )
3. Heat is transferred through different media by conduction and convection only. ( )
4. Mercury is from liquid metals. ( )

B Give reasons for :

1. The nucleus has a positive charge.
2. The kinetic energy will increase four times if the speed of the moving object is doubled.
3. Camel's limbs end in a thick flat pad.

Question 4

A What is meant by ... ?

1. Mass number. 2. Mechanical energy.

B Write the electronic configuration for :

1. ${}^{4}_{2}He$ 2. ${}^{16}_{8}O$ 3. ${}^{24}_{12}Mg$

C Give one example on :

1. Fern plant. 2. Monocotyledon plant. 3. A vertebrate animal.

6 Cairo Governorate — East Nasr City Educational Directorate, Science Inspection

Answer the following questions :

Question 1

A Complete the following statements :

1. .... and .... belong to teethless mammals.
2. The measuring unit of mass is ...., while .... is the measuring unit of volume.
3. .... and .... are examples of insectivorous plants.
4. Matter consists of small building units called .... , which consist of smaller building units called ....
5. Potential energy = ... × ....



B Problem :

When a piece of iron of mass 78 gm is put in a graduated cylinder containing 100 cm^3 of water, the reading of the cylinder becomes 110 cm^3. Calculate the density of iron.

C Give an example for each of the following :

1. A device changes kinetic energy into electric energy.
2. Plants reproduce by spores.



Question 2

A Write the scientific term for each of the following :

1. The simplest state of matter which can't be decomposed into a simpler one by chemical methods.
2. It is the amount of energy lost or gained by an electron when it transfers from one energy level to another.
3. The ability to do work or to make change.
4. The temperature at which matter changes from liquid state to gaseous state.
5. The ability of some living organisms to simulate the dominant environmental conditions to be hidden from their enemies or even to capture the preys.

B Compare between each of the following :

1. Insects and arachnids. According to the (number of legs)
2. Bean plant and maize plant.
3. Solid and gas. (Concerning attraction force among molecules)

C Write the electronic configuration of the following elements :

1. $_{16}S$ 2. $_{7}N$ 3. $_{20}Ca$

PART 3

Question 3

A Choose the correct answer :

1. The electric energy is converted into kinetic energy in ....
   a. electric lamp. b. cellular phone. c. electric fan.
2. .... is a permanent source of energy.
   a. Petrol b. The Sun c. Coal
3. Heat is transferred by radiation through ....
   a. liquids only. b. gases only.
   c. material media and non-material ones.
4. Scorpion belongs to ....
   a. insects. b. arachnids. c. mammals.
5. Energy is neither created nor destroyed but it can be transformed into another form, this law is known as law of ....
   a. conservation of energy. b. conservation of matter. c. kinetic energy.
6. From inert gases is ....
   a. nitrogen. b. helium. c. oxygen.

B Give reasons for each of the following :

1. The atom is electrically neutral in its ordinary state.
2. The freezer is put at the top of the fridge.
3. A camel's limb ends in a thick flat pad.
4. Water is not used to put out petrol fires.

C Write the chemical symbol of :

1. Silver. 2. Calcium. 3. Aluminium. 4. Sodium.

Question 4

A Put (✓) sign or (✗) sign in front of the following sentences :

1. Liquids have definite shapes and volumes. ( )
2. Iron rusts when exposed to dry air. ( )
3. Kinetic energy changes into heat energy by friction. ( )
4. Fishes are from animals that have an internal support. ( )
5. Chemical energy is stored in the car battery. ( )
6. The motion of the molecules of gas is limited. ( )
7. Hawks have strong and sharp crooked beaks to tear the prey's flesh. ( )

B **Mention the energy transformations in the following :**

1. Electric bell. 2. Simple cell. 3. Electric heater.

C **Cross out the unsuitable word for each in the following :**

1. Petroleum – Wood – Cork – Iron.
2. Reptiles – Fishes – Birds – Worms.
3. Sodium – Copper – Aluminium – Iron.
4. Bee – Spider – Fly – Ant.

7 Giza Governorate — Lycée El-Haram Language Schools

Answer the following questions :

Question 1

A **Put (✓) or (✗) and correct the wrong ones :**

1. The distance between the molecules in solids is very tiny. ( )
2. The mass number is the amount of energy gained or lost to transfer an electron from an energy level to another. ( )
3. The chemical symbol of the sodium element is (Sa). ( )
4. Kinetic energy is a work done during a motion of an object. ( )
5. Heat transfers by convection in liquids only. ( )
6. Arachnids have 4 pairs of jointed legs such as a spider. ( )
7. The bean plant is an example of dicotyledon plants. ( )

B **What is meant by the following ... ?**

1. The temperature.
2. The mass number.
3. Structural adaptation.
4. Heat transfers by radiation.

C **Write the symbols of the following elements :**

1. Sodium. 2. Gold. 3. Iron.

Question 2

A **Choose the correct answer :**

1. As an object is launched upwards ....
   a. its speed decreases.
   b. its speed increases.
   c. its kinetic energy increases.
   d. its potential energy decreases.
2. The 3rd energy level in the atom contains .... electrons.
   a. 2 b. 18 c. 8 d. 32
3. All the element are active but .... is not active.
   a. $_{1}H$ b. $_{6}C$ c. $_{7}N$ d. $_{18}Ar$



4. The colour property is a distinguishing factor between ....
   a. flour and table salt.   b. iron and gold.
   c. oxygen and carbon dioxide.   d. no correct answer.

5. Particles which are negatively charged and negligible mass are ....
   a. protons.   b. neutrons.   c. electrons.   d. photons.

6. Electric energy is converted into kinetic energy in ....
   a. electric lamp.   b. cellular phone.   c. electric fan.   d. battery.

7. Insects have .... of jointed legs.
   a. 3 pairs   b. 4 pairs   c. 2 pairs   d. 44 pairs

B Choose a phrase from column (A), what suits it in column (B) :

(A)	(B)
1. Total number of protons and neutrons is	a. are examples of small terrestrial plants.
2. Substances are good electric and heat conductors such as	b. example of animal that undergo aestivation.
3. Vougheir and adiantum	c. iron and aluminium.
4. Jerboa is	d. mass number.

C Compare between solid, liquid and gas regarding to :
Attraction forces.

Question 3

A Complete each of the following :

1. Alloy of .... used in making jewels.
2. The density is the .... of unit volume of a substance, its unit is ....
3. The liquid element its molecule composed of one atom is ...., while that composed of two atoms is ....
4. The electrons revolve around the nucleus in orbits known as ....
5. Electric cables are made up of .... or ....
6. Animals with external support such as .... and ....
7. Paddles of whales and dolphins are for ....

B Give reasons for :

1. The atom is electrically neutral.
2. The camel pad ends in a thick flat.
3. The inert gases do not react chemically with other element.

C Write the electronic configuration of the following atoms and indicate the number of electron in the outermost level and the number of neutrons.

1. $^{27}_{13}Al$ 2. $^{35}_{17}Cl$

Question 4

A Write the scientific term :

1. Is a group of similar living organisms in shape that can reproduce to give birth of new fertile individuals.
2. Is the smallest individual unit of matter which can share in chemical reactions.
3. The ability of some living organisms to be hidden from their enemies or to capture the preys in the predatory species.
4. Energy stored in an object due to work done on it.
5. Molecule is composed of three atoms : 2 hydrogen and 1 oxygen.
6. It is the temperature at which a substance changes from a liquid state into geseous state.
7. Energy is neither created nor destroyed, but it can be transformed into another form.

B Calculated :

1. The density of an object if : mass = 500 gm and volume = 200 cm^3.
2. A ball was launched upwards at a speed 5 m/s up to height 6 m.
   Calculate the mechanical energy of the ball if its weight is 40 N and has a mass 5 kg.

C The migration is a type of adaptation for the some birds :

1. Why some species of birds are adapted to the migration?
2. What is the type of this adaptation?

8 Giza Governorate — Talaee Islamic Language School

Answer the following questions :

Question 1

A Choose the correct answer :

1. .... is from rodents that undergo aestivation.
   a. Rat b. Squirrle c. Jerboa d. Desert snail
2. The colour property is a distinguishing factor between ....
   a. table salt and flour. b. iron and gold.
   c. oxygen and nitrogen. d. oxygen and carbon dioxide.
3. An object potential energy is zero, when the object is at the ....
   a. maximum height. b. Earth's surface.
   c. when mass object increases. d. when the object speed increases.
4. .... insect exactly looks like the plant branches.
   a. Stick b. Beetle c. Leaf d. Locust



B Give reason for the following :

1. It is favorable to produce electricity from solar energy than fuel burning.
2. Water is not used to extinguish petrol fires.
3. The atom is electrically neutral.
4. The front limbs in the dolphin are different from the bat's ones although they are structured with similar bones.

C Compare between bean plant and corn plant.

Question 2

A Complete the following statements :

1. Equal masses of different substances have different .... and ....
2. .... is the basic unit of classification in living organisms.
3. .... energy is changed into electric energy in the battery.
4. .... take the shape of the container but .... have definite shape.
5. The liquid element which is composed of one atom is .... , while that composed of two atoms is ....

B Write the electronic configuration for the following elements :

$({}^{27}_{13}\text{Al} - {}^{16}_{8}\text{O})$ then calculate the number of neutrons.

C What is meant by quantum ?

Question 3

A Write the scientific term :

1. The transfer of heat through solid objects from part to another.
2. The work done during motion of the body.
3. The spaces found among the molecules of a substance.
4. The ability of some living organisms to stimulate the dominant environmental conditions to be hidden from their enemies or even to capture the preys.
5. The smallest particle of the matter can exist freely and has the properties of its substances.

B What is meant by melting point ?

C Find the weight of an object of potential energy 88 joules, when found at height 11 metre.

Question 4

A Correct the underlined words :

1. Distance among **solids** molecules is very large.
2. The substances that can conduct heat and electricity are **wood and plastic**.
3. **The coal** is a permanent source of energy.
4. **Camphor tree** is an example of insectivorous plant.

B Choose the odd words out then mention the relation between the rest :

1. Mosquito – Spider – Cockroach – Ant.
2. Snake – Jellyfish – Shark – Frog.
3. $_{6}C$ – $_{10}Ne$ – $_{9}F$ – $_{7}N$

C What is meant by the density of aluminium is 2.7 gm/cm³ ?

9 Giza Governorate — Pyramids Language School



Answer the following questions :

Question 1

A Write the scientific term :

1. The mass of unit volume of matter.
2. The sum of the protons and neutrons in the nucleus of an atom.
3. The sum of the potential and kinetic energies of the body.
4. Energy is neither created nor destroyed, but it is converted from one form to another.

B Mention one use for :

1. Copper-gold alloy.
2. Simple cell.

C Problem :

The mass of an empty beaker = 75 gm where the mass of the beaker filled with liquid = 153 gm while the volume of the liquid = 100 cm^3. Find the density of the liquid.

Question 2

A Complete the following :

1. The molecule of water consists of two .... atoms and one .... atom.
2. From very active metals .... and ....
3. Kinetic energy = $\frac{1}{2}$ × .... × ....
4. From the animals that have soft body .... and ....





PART 3

B Give reasons for :

1. Water birds such as ducks and geese have wide indented beaks.
2. Neon atom ($_{10}Ne$) does not enter a chemical reaction.

C Write the electronic configuration of the following :

1. $_{12}Mg$
2. $_{19}K$

Question 3

A Correct the underlined words :

1. **Compound** is the smallest part of matter which can exist freely and it has the properties of matter.
2. In the solar cell the solar energy is changed into **heat** energy.
3. **Kinetic** energy stored in the object due to a work done on it.
4. The ability of some living organisms to be hidden from their enemies is **hibernation**.

B Problem :

Calculate the potential energy of an object of 20 N weight is placed at 5 m height.

C What will happen if ... ?

1. Hawks and vultures have not sharp and strong crooked beaks.
2. You add 200 cm^3 of ethyl alcohol to 300 cm^3 of water in a measuring cylinder.

Question 4

A Choose the correct answer :

1. It is possible to distinguish between sugar and salt by their ....
   a. taste. b. colour. c. smell.
2. The measuring unit of energy is ....
   a. newton. b. kilogram. c. joule.
3. Vougheir and adiantum reproduce by ....
   a. seeds. b. roots. c. spores.
4. From the teethless mammals ....
   a. lion. b. sloth. c. rabbit.
5. The heat of the Sun doesn't reach to the Earth by ....
   a. radiation. b. conduction. c. no correct answer.

B Compare between : Insects and arachnids according to the number of jointed legs.

C Mention an example of :

1. Unicellular micro-organisms.
2. Insectivorous plants.

10 Giza Governorate — Science Inspectorate

Answer the following questions :



Question 1

A Write the scientific term :

1. Energy stored in the object due to work done on it.
2. It is the temperature at which matter begins to change from solid state to liquid state.
3. The ability of some living organisms to hidden from their enemies.
4. A way of heat transfer through solids.

B Write the symbols of the following elements :

1. Calcium. 2. Silver. 3. Zinc. 4. Potassium.

C What's the density of copper if the mass of a piece of it is 44 gm and it occupies a space of 4 cm^3.



Question 2

A Give reasons for :

1. The atom is electrically neutral.
2. Cooking pots have handles made up of wood.
3. Spider is not from insects.
4. The bike tire gets hot once you press the brakes.

B Mention the energy transformation in each of the following :

1. Electric heater.
2. Simple pendulum.

C Write the electric configuration of the following :

1. $^{24}_{12}Mg$ 2. $^{40}_{20}Ca$ 3. $^{16}_{8}O$



Question 3

A Calculate the kinetic energy of an object it's mass (12 kg) when it moves at a speed 20 m/s.

B Complete the following :

1. Measuring unit of volume is .... and that of mass is ....
2. The charge of protons is .... , while that of electrons is ....
3. Weight = ... × ....
4. .... is an example for plants that reproduce by spores.

C What happens when ... ?

1. Metallic spare parts of cars are not covered with grease.
2. Open a bottle of perfume for a period of time.

PART 3

Question 4

A Choose the correct answer :

1. Heat transfer by radiation through ....
   a. liquids only. b. gases only. c. metals only.
   d. material media and non-material ones.
2. The third energy level is saturated by .... electrons.
   a. 2 b. 10 c. 18 d. 8
3. Electric energy is converted into kinetic energy in ....
   a. electric lamp. b. cellular phone. c. electric fan. d. electric bell.
4. .... are from the animals which do not have body support.
   a. Reptiles b. Snails c. Jellyfishes d. Birds
5. The number of the anterior fingers in the hawk is ....
   a. 3 b. 4 c. 2 d. 5

B What is the function of ... ?

1. Long arm of monkey.
2. Wide indented beak of a duck.

C Find the weight of an object of potential energy 88 joule when found a height of 11 m.

11 Alexandria Governorate

East Educational Zone
Science Inspectorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Equal masses of different substances have different ....
2. During vaporization process, liquid molecules .... energy and converted into .... state.
3. Kinetic energy increases by increasing .... and .... of the object.
4. Heat is transferred through gases by .... , while transferred through solids by ....
5. Plants that reproduce by formation of seeds are divided into .... and ....

B What is meant by ... ?

1. Quantum.
2. Potential energy.

C Write the symbols of the following elements :

1. Copper. 2. Silver. 3. Lead.

Question 2

A Write the scientific term :

1. A group of living organisms mostly similar to each other in their shape and produce new fertile members.
2. Imaginary places in which electrons can move according to their energies.
3. The simplest form of matter which can not be decomposed into simpler one.
4. It is the main source for the most energy resources on the Earth.
5. The pollution produced from the webs of wireless transmitters of cellular phones.
6. Plants that can't be distinguished into roots, stems and leaves.

B Give reasons for each of the following :

1. The freezer is found at the top of the fridge.
2. The fuel inside the car is similar to the food inside the body of the living organism.
3. The atom is electrically neutral.

C When a piece of iron mass 78 gm is put in a graduated cylinder containing 100 cm^3 of water, the water increases up to 110 cm^3. Calculate the iron density.

Question 3

A Put (✓) or (✗) in the front of each sentences and correct the wrong ones :

1. The attraction forces among molecules of solids are very weak. ( )
2. Sloth and armadillo are edentates mammals. ( )
3. In solar cells the solar energy is converted into heat energy. ( )
4. Spiders are arthropods that have three pairs of jointed legs. ( )

B Complete the following table by suitable completion :

Device	Type of energy resource
1. Solar heater :	....
2. Electric water heater :	....
3. Gas stove :	....

C Write down the electric configuration of the following atoms :

1. $^{32}_{16}S$
2. $^{20}_{10}N$

PART 3

Question 4

A Choose the correct answer :

1. Some elements which has a great difficulty to react with oxygen is ....
   a. potassium. b. sodium. c. aluminium. d. platinum.
2. Electric energy is converted into kinetic energy in ....
   a. electric lamp. b. cellular phone. c. electric fan. d. electric bell.
3. In doubling the height of an object from the ground, its ....
   a. kinetic energy is increased to its double value.
   b. potential energy is increased to 3 times.
   c. mechanical energy is increased 4 times.
   d. potential energy is increased to its double value.
4. The scorpion belongs to ....
   a. arachnids. b. myriapods. c. mammals. d. insects.
5. In the filament of electric lamp the ....
   a. light energy is converted into mechanical energy.
   b. chemical energy is converted into light energy.
   c. electric energy is converted into heat energy.
   d. electric energy is converted into mechanical energy.
6. Heating coils are made up of .... alloy.
   a. iron-copper b. nickel-iron c. nickel-chrome d. chrome-copper
7. An object of 20 newton weight and it is placed at a height of 5 m, so its potential energy is .... joules.
   a. 50 b. 150 c. 100 d. 200
8. All of the following elements are inactive elements except ....
   a. $_{2}He$ b. $_{15}P$ c. $_{18}Ar$ d. $_{10}Ne$

B Give example showing each of the following :

1. An animal with a soft body.
2. A monocotyledon plant.
3. A myriapod animal.

C What is the mathematical relationship that binds between each of the following :

1. Weight of an object and its mass.
2. Mechanical energy of an object and its potential energy.
3. Potential energy, weight and height.

12 Alexandria Governorate — Middle Educational Zone

Answer the following questions :

Question 1

A Complete the following statements :

1. The mass of the atom is concentrated in the ....
2. The protons have .... charges.
3. Heat transfers from the Sun to the Earth by ....
4. From the examples of huge trees is ....
5. The gymnosperms plants as pine produces seeds inside ....
6. Arachnids have .... pairs of jointed legs.

B Mention one example for :

1. A permanent source of energy.
2. An amphibian undergoes hibernation.
3. Lagomorphs.
4. Camouflage in insects.

C Compare between the following :

1. Mercury and bromine concerning the molecule structure.
2. The car engine and the car cassette concerning the energy produced.

Question 2

A Correct the underlined words :

1. Liquids have **a fixed** shape.
2. The relation ($2n^2$) is not applied to energy level higher than **5^{th}** level.
3. In solar cell the solar energy is changed into **magnetic** one.
4. In simple cell the positive pole is a rode of **zinc**.
5. Secreting poison in snakes is considered as a **behavioural** adaptation.
6. Insectivorous plants catch and pounce insects to get **starch**.

B Cross out the odd word, then mention the common property between the rest :

1. Butter – Ice – Iron – Wax.
2. Armadillo – Lion – Tiger – Wolf.

C Give reasons for the following :

1. Electrician use a screwdriver made up of steel iron with woody handle.
2. Heater is placed on the ground, while the air conditioner is put at high position in the room.
3. The shallow water birds have long and thin beaks.

PART 3

Question 3

A Choose the correct answer :

1. The symbol of copper is ....
   a. C   b. Co   c. Cu
2. The attraction force among molecules of .... is very weak.
   a. oxygen   b. oil   c. aluminium
3. On doubling the height the potential energy is ....
   a. constant.   b. doubled.   c. increased four times.
4. An example of animals with internal support is ....
   a. octopus.   b. snail.   c. shark.
5. .... bird migrates in winter.
   a. Hawk   b. Quail   c. Ostrich
6. An example of plants that reproduce by forming spores is ....
   a. vougheir.   b. wheat.   c. cycas.

B Mention one use or function for the following :

1. Nickel-chrome alloy.
2. Simple electric cell.
3. Microscope.
4. Long arms and fingers in monkey.

C Write down the electronic configuration for $^{4}_{2}He$, then answer the following :

1. Calculate the number of neutrons.
2. Does this element share in chemical reaction ? And why ?
3. What is the use of this element ?

Question 4

A Write scientific term for the following :

1. The temperature at which, a substance changes from the liquid state to the gaseous one.
2. The product results from a combination between two or more atoms of different elements with constant weight ratios.
3. The sum of potential energy and kinetic energy.
4. A form of energy transfers from higher temperature to lower temperature.
5. Plants can't be distinguished into roots, stems and leaves.
6. The basic classification unit for living organisms.

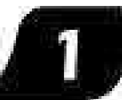
B **What happens in the following cases and why ... ?**

1. If water is used to put out the petrol fires.
2. If you put a drop of potassium permanganate in a jar containing water.
3. Rubbing your hands together.

C **A racing bike moves with a speed of 20 m/s. Calculate its kinetic energy knowing that the mass of the bike is 8 kg.**

13 Alexandria Governorate — El-Agamy Educational Zone

Answer the following questions :

Question 

A **Choose the correct answer :**

1. The amount of energy gained or lost by the electron is called ....
   a. joule. b. quantum. c. neutron. d. proton.
2. .... reproduces by spores.
   a. Vougheir b. Pine c. Bean d. Wheat
3. The fourth energy level is saturated by .... electrons.
   a. 32 b. 18 c. 8 d. 2
4. When air heats up its density ....
   a. still constant. b. increases. c. decreases. d. (b) and (c).

B **Write the electronic configuration for :**

1. $^{24}_{12}Mg$ 2. $^{16}_{8}O$ 3. $^{40}_{18}Ar$

Question 2

A **Put (✓) or (✗) in the following statements :**

1. The positive pole in a simple cell is lead. ( )
2. Heat transferred through solids by conduction. ( )
3. Jewels are made up of copper-gold alloy. ( )
4. All inert gases are monoatomic. ( )
5. Mass number is the sum of protons and electrons numbers. ( )

B **What happens when ... ?**

1. Coil the wire of a simple cell around a compass.
2. Putting of a drop of ink in water.

PART 3

Question 3

A Complete the following statements :

1. The potential energy of an object depends on .... and ....
2. .... and .... are very active metals.
3. An animal which has no body support such as ....
4. The atom nucleus contains .... and ....
5. Scolopendra belongs to ....
6. Plants reproduce by formation of seeds divided into .... and ....

B Give reasons for each of the following :

1. Wood floats on water surface, while a piece of lead sinks in it.
2. Camel's limbs end in a thick flat pad.

Question 4

A Write the scientific term for each of the following :

1. The sum of potential and kinetic energies of a body.
2. The temperature at which a solid substance starts to change into liquid.
3. The basic classification unit of living organisms.
4. Volume measuring unit.

B Problem :

Find the kinetic energy if the mass of the body is 5 kg and moves with a speed 10 m/sec.

C What's meant by ... ?

The conservation law of energy.

14 El-Qalyuobia Governorate — Memphis Language School

Answer the following questions :

Question 1

A Complete :

1. The liquid element which is composed of one atom is .... , while that is composed of two atoms is ....
2. The intermolecular forces among molecules of solids are .... and in gases are ....
3. .... is an example for micro-organisms that live in water.

4. Metallic bridges are painted from time to time to protect them from ....
5. When an electron transfers from an energy level near the nucleus to a higher one, it .... a quantum of energy and the atom becomes .... atom.
6. The molecule of hydrogen chloride consists of one atom of ...., and one atom of ....

B On determining iron density using a piece of iron of mass 78 gm, the piece is immersed in 100 cm^3 of water, then water rises up to 110 cm^3. Calculate the density of iron.

Question 2

A Write the scientific term :

1. Plants that can't be distinguished into roots, stems and leaves.
2. Energy neither be created nor destroyed.
3. The type of adaptation when birds migrate from one place to another.
4. The sum of the numbers of protons and neutrons inside the nucleus of the atom.

B What are the differences between ... ?

1. Hydrogen and helium.
2. Bat and whale (According to the adaptation of the front limbs).

C Write down the electronic configuration and the type of the following elements :

1. $^{7}_{3}Li$ 2. $^{20}_{10}Ne$

Question 3

A Choose the correct answer :

1. In car engine the chemical energy is changed into .... energy.
   a. magnetic b. electric c. mechanical
2. The electron is .... charged particle.
   a. positively b. negatively c. neutrally
3. The number of pairs of scorpion legs is ....
   a. 4 b. 3 c. 44
4. An object of weight 6 newtons, moved to a height 5 m, its potential energy is .... joules.
   a. 30 b. 75 c. 11

B Give reasons for :

1. Some birds have long thin beaks and long thin legs.
2. Wood floats on the surface of water.
3. Cooking pots are made of aluminium, while their handles are made of wood.

PART 3

C **Put (✓) or (✗) and correct the wrong statement :**

1. Energy is stored in the form of kinetic energy when the pendulum is displaced up. ( )
2. Insectivorous plants get the nitrogenous substances through photosynthesis. ( )
3. Angiosperms are flowering plants. ( )

Question 4

A **Correct the underlined words :**

1. **Ammonia** molecule consists of two atoms of hydrogen and one atom of oxygen.
2. The electron can transfer to a higher energy level if it **loses** energy.
3. **Rat** is considered from teethless mammals.
4. The **camel's** limbs end with strong hoofs.

B **What happens when ... ?**

1. The bones of the front limbs and fingers of monkey are not elongated.
2. You inserted two different metallic rods in a lemon connected by a wire.
3. You added 20 cm^3 of alcohol to 30 cm^3 of water in a measuring cylinder. And why?

C **Give one example for each of the following :**

1. A substance doesn't become soft on heating.
2. A gas which doesn't take a part in the chemical reaction.
3. A plant that reproduces by spores.

15 El-Sharkia Governorate — Franciscan Sisters School

Answer the following questions :

Question 1

A **Give the scientific reasons :**

1. The legs of water birds are palm.
2. The electrons are distributed to fill the (K) level before filling the (L) level.
3. The nucleus of the atom is positively charged.
4. The freezer is found at the top of the fridge.
5. Some animals undergo hibernation.

B **Write the electronic configuration for the following element :**

– $^{35}_{17}Cl$: Then calculate the atomic number – the mass number – the number of protons – the number of neutrons – the number of electrons – the number of energy levels having electrons – the number of electrons in the outermost energy level. Determine if the atom is active or inactive and mention the reason.

C Choose the correct answer :

1. An object potential energy is zero when the object ....
   a. is at the maximum height. b. is at the Earth's surface. c. mass increases.
2. Heat transfers by convection occurs through ....
   a. liquids only. b. gases only. c. liquids and gases.
3. .... is an example for micro-organisms.
   a. Amoeba b. Sloth c. Snail
4. Spider has .... pairs of jointed legs.
   a. two b. three c. four

Question 2

A Write the scientific term for the following :

1. The smallest part of matter that can exist freely having the properties of matter.
2. The transfer of heat from hot object to another without any need for a material medium through which heat transfers.
3. The ability of some living organisms to simulate the dominant environmental conditions to be hidden from their enemies.
4. The sum of potential and kinetic energies.
5. A group of similar living organisms in shape that can reproduce to give birth of new fertile individuals.
6. Energy is neither created nor destroyed but it can be transformed into another form.

B Write the symbols for the following elements :

1. Aluminium. 2. Bromine. 3. Calcium. 4. Flourine. 5. Oxygen.

C Calculate the density of a piece of copper, if you know that its mass equals 60 gm, and its volume equals 10 cm^3.

Question 3

A What happens when ... ?

1. Leaving a piece of iron exposed to moist air for a period of time. And why?
2. Dipping a copper rod and a zinc rod connected by a wire in diluted sulphuric acid.
3. Increasing the speed of a moving object to double. And why?

B Complete the following sentences :

1. If the height of an object increases to double, its potential energy increases to ....
2. Jerboa undergoes .... to overcome the .... in temperature.
3. In the car dynamo .... energy is changed into .... energy.





4. .... has an internal support, while .... has an external support.
5. When an object is launched upwards, its speed ....
6. .... is soft at room temperature, while .... can't be soften.

C Find the mechanical energy of a ball falls from 8 m height if its mass equals 4 kg and it falls with a speed 3 m/sec. (given that the gravity acceleration equals 10 m/sec^2).

Question 4

A Mention the difference between each of the following :

1. Wheat and pea.
2. Kinetic energy of an object at maximum height and on reaching the ground.
3. Intermolecular forces in solids and in gases.
4. Cockroach and scorpion.

B What is meant by each of the following ... ?

1. The density of iron equals 7.8 gm/cm^3.
2. Potential energy of an object equals 10 joules.

C Put (✓) or (✗) and correct the mistakes :

1. Taxonomy is a branch of biology that searches for the similarities and differences among living organisms. ( )
2. Motion of molecules is limited in liquids. ( )
3. The birds activity during the daylight is considered a functional adaptation. ( )
4. Friction turns mechanical energy to electric energy. ( )

16 El-Menofia Governorate — Shebin Elkom Educational Administration

Answer the following questions :

Question 1

A Write the scientific term for each of the following :

1. A liquid used to keep sodium and potassium metals from air.
2. It is the ability to do work or to make a change.
3. It is a basic classification unit for living organism.
4. Pollution produced from the web of cellular phone.
5. A modification in behaviour, structure of function of a living organism to become more adapted with environment.

B What is meant by ... ?

1. The kinetic energy of an object = 20 joules.
2. Camouflage.
3. Melting point of ice = 0°C
4. Density of metal = 7.8 gm/cm^3.

C Write the electronic configuration of :

1. $^{16}_{8}O$
2. $^{23}_{11}Na$

Then find :

a. Number of neutrons.
b. number of energy levels.

Question 2

A Complete the following :

1. The liquid element whose molecule composed of one atom is ...., while the liquid element which its molecule composed of two atoms is ....
2. An alloy of .... is used in making jewels, but .... alloy is used in making heating coils.
3. In the simple cell, ... energy changes into .... energy.
4. The number of jerboa's upper jaw incisors equals .... and the number of the rabbit's upper jaw incisors equals ....
5. The symbol of potassium atom is ...., while the symbol of silver atom is ....
6. .... is from very active metals but .... is from inactive metals.

B Give reasons for :

1. Freezer is found at the top of the fridge.
2. Some plants pounce insects.
3. The electrons are distributed to fill the (K) level before filling the (L) level.
4. Frog hibernates in winter.

C Find the potential energy of an object, whose mass = 200 gm if it is found at height 10 m from the ground. (acceleration of gravity = 10 m/s^2.)

Question 3

A Put (✓) or (✗) and correct the wrong ones :

1. Electron transfers from (N) energy level to (K) by gaining quantum. ( )
2. Euglena from multicellular living organisms. ( )
3. The transfer of heat through copper is by conduction. ( )
4. Angiosperms are called flowering plants. ( )
5. When the ball of pendulum goes away from its original position, its kinetic energy increases. ( )
6. At mid height divide (K.E.) over (P.E.) of object = 1 ( )

PART 3

B **What will happen if ... ?**

1. The legs of camel do not end with thick flat pads.
2. The mass number equals the atomic number in the nucleus of an atom of an element.
3. You add 100 cm^3 of ethyl alcohol to 400 cm^3 of water.
4. Overuse of chemical pesticides.

C **Mention the formula by which you can :**

1. Calculate the number of electrons that saturates each energy level from one to four.
2. Show relation between mechanical energy, kinetic energy and potential energy.

Question 4

A **Choose the correct answer :**

1. Nucleus of atom is .... charged.
   a. positively b. negatively c. neutrally d. all are right
2. .... belongs to animals that have no body support.
   a. Mussel b. Hedgehog c. Octopus d. Snake
3. In the solar cell, the solar energy is directly converted into .... energy.
   a. kinetic b. light c. electric d. heat
4. Distance among molecules are very small in ....
   a. water. b. copper. c. hydrogen. d. oil.
5. Birds migration represents .... adaptation.
   a. anatomical b. functional c. structural d. behavioural
6. By increasing the height to double and decreasing the mass of an object to half the potential energy will ....
   a. increase to double. b. decrease to half. c. not change. d. increase four times.

B **Choose the odd word out, then write the scientific term for the other words :**

1. Iron – Copper – Aluminium – Wood.
2. Dieonea – Drosera – Amoeba – Halophila.
3. Whale – Bat – Dolphin – Sea lion.
4. Spiders – Locusts – Flies – Cockroaches.

C **Give the difference between :**

1. Solid material and gaseous material
   (Concerning : intermolecular space, intermolecular force).
2. Electric heater and solar heater
   (Concerning : effect on the environment and kind of energy resource).

17 El-Dakahlia Governorate

Educational Directorate
Scienec Inspectorate

Answer the following questions :

Question 

A Choose the correct answer :

1. The measuring unit of density is ....
   a. m/s. b. gm/cm^3 c. kg/s.
2. .... is from the compound molecules.
   a. Cl_2 b. H_2O c. Fe
3. .... is from the inert gases.
   a. He b. Al c. Cl
4. The number of electrons that saturates the level (K) is ....
   a. 8 b. 2 c. 32
5. Resource of permanent energy is ....
   a. petrol. b. the Sun. c. coal.
6. Dynamo converts mechanical energy into .... energy.
   a. electric b. nuclear c. solar
7. .... haven't a body support.
   a. Snails b. Dogs c. Jellyfishes

B Fill in the following table after coping it in your answer sheet :

By knowing that (Mass number = Number of protons + Number of neutrons).

	Atomic number	Mass number	Number of protons	Number of neutrons
Hydrogen	1	1	....	....
Calcium	20	....	....	20
Carbon	....	12	....	6
Chlorine	....	35	17	....

C Mention the formula (law) by which you can determine :.

1. The number of electrons in each energy level.
2. The work done.
3. The weight of an object.

PART 3

Question 2

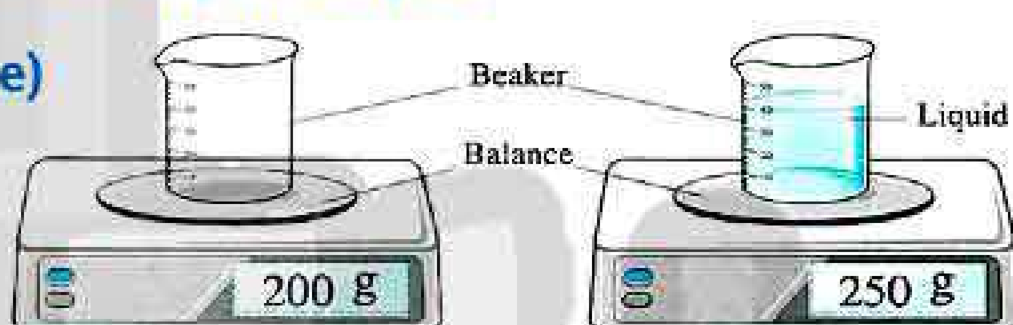
A Put (✓) or (✗) with correcting the false ones :

1. Water is used to put out petrol fires. ( )
2. Mass number is the number of neutrons in the nucleus. ( )
3. Wood and copper are bad conductors of electricity. ( )
4. Chemical energy can be stored in stretched spring. ( )
5. Fuel in a car as food for a man. ( )
6. The measuring unit of potential energy is the joule. ( )
7. The hydrogen molecule consists of two hydrogen atoms. ( )

B The diagram shows an experiment to find the density of a liquid

By using the formula (Density = Mass/Volume)

Calculate the density of the liquid.



C Give reasons for :

1. The atom is electrically neutral.
2. The mass of the atom is concentrated in its nucleus.
3. Freezer is found at the top of the fridge.
4. Cooking pots are made up of aluminium.

Question 3

A Write the scientific term :

1. The number of positive protons in the nucleus.
2. The ability to do work, or to make a change.
3. The simplest pure form of matter which can't be analyzed simpler.
4. The matter which doesn't take the shape of the container.
5. Amount of energy which an electron loses or gains to transfer from an energy level into another one.
6. Temperature at which solid state begins to change into liquid one.
7. A modification in behaviour, structure or biological function of living organisms to become more adapted with the environmental conditions.

B Write the electronic configuration of the following atoms : $^{39}_{19}K$ - $^{7}_{3}Li$ - $^{19}_{9}F$ - $^{40}_{18}Ar$

C Fill in the following table after copying it in your answer sheet :

(Heat energy - Wind - Food - Sound energy- Electric energy -The Sun).

Energy forms	Energy resources
....	....
....	....
....	....

Question 4

A Problem :

A ball was launched upwards and vertically at a speed 3 m/s up to a height 4m. Calculate the mechanical energy of the ball if its weight is 5 newtons and has a mass 0.5 kg.

B Write the name of each chemical symbol of the following:

1. P 2. Ne 3. Si 4. N

C Study the figure, then mention :

Heat transfers through different media by : (conduction, convection and radiation). Mention the method of transferring heat in each area (A, B, and C).

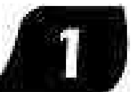


D State one difference between :

1. Potassium and gold. (Concerning chemical activity)
2. Insects and arachnids. (According to the number of legs)
3. Solid and gas. (Concerning the intermolecular spaces)
4. Hydrogen and Helium. (According to the number of atoms in its molecule)

18 Ismailia Governorate — Science Inspectorate

Answer the following questions :

Question 1


A Complete the following statements :

1. The liquid element which consists of one atom is called ....
2. An example for a very active metal is ....
3. Friction turns kinetic energy into .... energy.

PART 3

4. The whale front limbs are modified into ....

5. The simple cell consists of .... solution and two different metals.

6. The electrons have .... charge.

7. .... is from the plants that reproduce by spores.

8. Kinetic energy increases by increasing speed and ....

B Give reasons for the following :

1. The heater is put at the bottom of the room.
2. Some animals hibernate in winter.
3. The electrons are distributed to fill the (K) level before filling the (L) level.
4. The front teeth of hedgehog are extending outwards.

C When a piece of iron, whose mass is 78 gm is put in a graduated cylinder containing 100 cm^3 water, the water rises to 110 cm^3. Calculate the density of iron.

Question 2

A Choose the correct answer for the following :

1. An object of mass 2 kg is moving at a speed of 4 m/sec. so its kinetic energy is .... joules.

a. 16 b. 6 c. 8 d. 32

2. The solar heater changes solar energy into .... energy.

a. chemical b. electric c. kinetic d. heat

3. The Sun is a .... source of energy.

a. non-renewable b. renewable c. permanent d. all the previous

4. The density of petroleum oil is .... that of water.

a. less than b. more than c. equal to d. no correct answer

5. Insectivorous plants cannot absorb the nitrogenous substances to make ....

a. carbohydrates. b. proteins. c. fats. d. vitamins.

6. Secretion of poison in some snakes is an example of ....adaptation.

a. structural b. behavioural c. functional d. all of them

7. .... is an animal that have no body support .

a. Octopus b. Snake c. Hedgehog d. no correct answer

8. The figure which represents oxygen molecule is ....

a. ◯○ b. ○◯○ c. ◯ d. ○○

9. Number of neutrons in the ($^{27}_{13}Al$) is ....

a. 13 b. 27 c. 14 d. 40

10. The transfer of heat with no need for a medium is called ....

a. convection. b. radiation. c. conduction. d. no correct answer.

B How can the following be adapted to their environment :

1. Stick insect to hide from its enemies.
2. Quail bird to overcome the decrease in temperature.

C Calculate the weight of a body whose potential energy is 88 joules and it is at a height of 11 m.

Question 3

A Write the scientific term :

1. Energy is neither created nor destroyed , but it can be changed from one form to another.
2. The ability of some living organisms to simulate the dominant environmental conditions to hide from enemies or capture insects.
3. The amount of energy lost or gained when an electron transfers from one energy level to another.
4. The result of combination between two or more different elements with constant weight ratios.
5. The temperature at which a substance starts to change from the solid state to the liquid state.
6. The smallest part of matter which can exist alone and keep properties.

B Give one example for each of the following :

1. Aestivation in animals.
2. A solid substance which is soft at room temperature.
3. Plants that can't be distinguished into roots, stems and leaves.
4. A bird whose beak is wide indented in the two sides.

C Put (✓) in front of right statement and (✗) in front of wrong one :

1. Heat is transferred in solids by conduction. ( )
2. The intermolecular forces are very strong in gases. ( )
3. In the car dynamo , electric energy is changed into kinetic energy. ( )
4. Bean plant is a dicotyledon plant. ( )

PART 3

Question 4

A Complete the following table :

Symbol	Element name	Atomic number	Electronic configuration			Activity
			K	L	M	
$_{11}Na$	....	....	2	8	1	....
$_{10}Ne$	Neon	....	....	....	....	....
$_{12}Mg$	....	12	....	....	....	Active

B Compare between : insects and arachnids (number of legs only).

C Examine the figures , then complete the sentences :

1. The maximum potential energy is in point(s) .... , while the maximum kinetic energy is at point(s) ....

(B) (A) (C)

2. The figure represents the gaseous material is .... , while the figure represents the liquid material is ....

(1) (2) (3)

19 Port-Said Governorate — El-Qadessia Language School

Answer the following questions :

Question 1

A Complete the following phrases :

1. Scolopendra belongs to ...., whereas spider belongs to ....
2. Jewels are made up of .... alloy, while heating coils are made up of .... alloy.
3. The nitrogen molecule consists of ...., while the argon molecule consists of ....
4. When a body raised up, the potential energy ...., while the kinetic energy ....

B An object has a kinetic energy 64 joules and moving at a speed 4 m/s. Find the object mass.

C Give reasons for the following :

1. The atom is electrically neutral.
2. Camel limbs end in a thick flat pad.
3. Heater is put at the bottom of the room.

Question 2

A Write the scientific term for each of the following statements :

1. The basic classification unit for living organisms.
2. The amount of energy that gained or lost by the electron to transfer from an energy level to another.
3. The temperature at which a solid substance starts to change into liquid.
4. Energy is neither created nor destroyed, but it is converted from one form to another.

B When a piece of copper of mass 156 gm is put in a graduated cylinder containing 100 cm^3 of water, the reading of cylinder becomes 120 cm^3. Calculate the density of copper.

C Compare between :

1. Solids and liquids. (According to attraction force)
2. Bean and pine plants. (According to seeds)
3. Heat energy and temperature. (Concerning : definition)

Question 3

A Write down the electronic configuration of the following elements :

1. $_{11}Na$ 2. $_{17}Cl$ 3. $_{10}Ne$

B What happens when ... ?

1. Using water in putting out petrol fires.
2. Camel exchanges its pad with a horse's hoof.
3. Friction between a tire of a bicycle and a rough surface.
4. An electron gains a quantum of energy.

C Put (✓) in front of the correct statement and (✗) in front the incorrect one , then correct the wrong ones :

1. Aestivation is the behaviour that some animals do by hiding in burrows to avoid low temperature in winter. ( )
2. The mass number is the number of protons and electrons. ( )
3. Potential energy of an object decreases by increasing its height. ( )
4. The motion of gases is completely free. ( )

Question 4

A Choose the correct answer :

1. The following animals have no body support except ....
   a. worms. b. octopus. c. jellyfish. d. fish.

PART 3

2. .... reproduces by spores.

a. Vougheir b. Pine c. Bean d. Wheat

3. As an object falls downwards, ...

a. the potential energy increases.
b. the kinetic energy increases.
c. the mechanical energy is lost.
d. the speed of the object decreases.

4. When atomic number of an element equals its mass number, this means that there aren't .... in the nucleus of this element.

a. electrons b. protons c. neutrons d. photons

B Mention the formula by which you can :

1. Calculate the number of electrons that saturates each energy level.
2. Show the relation between mechanical, kinetic and potential energies.

C Look at the opposite figure, then answer :

1. Mention the name of the opposite.
2. Label the figure.
3. This device changes .... energy into .... energy.

(1) (2) (3)

20 Damietta Governorate — Damietta Official Language Schools

Answer the following questions :

Question 1

A Complete :

1. Silver symbol is ...., whereas sulphur symbol is ....
2. Hawks have .... beaks to tear the prey, whereas ducks have .... beaks to filter food from water.
3. The liquid element that its molecule is composed of one atom is .... , while that composed of two atoms is ....
4. An object of mass 2 kg is moving at a speed of 4 m/s has a kinetic energy ....
5. Electric energy is converted into kinetic energy in ....
6. .... and .... are teethless mammals.
7. The number of energy levels in the largest known atom is ....
8. Electric cables are made up of ....

B Compare between :

1. Melting point and boiling point.
2. Scorpion and bee (According to the number of legs).

Question 2

A Choose the correct answer :

1. An object of 20 N weight is placed at 5 m height, it has potential energy ....
 a. 50 J. b. 100 J. c. 150 J.
2. From animals with internal support : ....
 a. octopus. b. snails. c. fish.
3. Positive charged particles in the nucleus of atom are ....
 a. neutrons. b. protons. c. electrons.
4. Potassium is symbolized by ....
 a. P b. K c. B
5. From gymnosperms plants : ....
 a. wheat. b. pine plant. c. maize.
6. Density measuring unit ....
 a. cm^3. b. gm. c. gm/cm^3.
7. In the solar batteries the solar energy is directly converted into .... energy.
 a. light b. sound c. electric
8. Heat is transferred by radiation through ....
 a. liquids only. b. gases only. c. material media and non-material ones.

B (1) Write the electronic configuration of :

$^{23}_{11}Na$ $^{27}_{13}Al$

- Then determine each of the following :
 1. Atomic number.
 2. Mass number.
 3. Number of neutrons.

(2) What is meant by the following ... ?

- Mechanical energy of an object is 100 joule.

Question 3

A Give reasons for :

1. Water is not used in extinguishing petrol fires.
2. Camel limbs ends in a flat thick pad.
3. It is difficult to bend iron rod.
4. Inert gases cannot share in chemical reaction in ordinary conditions.
5. The heater is placed on the ground.

PART 3

B Give one different between each of the following :

1. Bean plant and maize plant. 2. Insects and arachnids.

C (a) Identify :

1. Energy. 2. Quantum. 3. Adaptation.

(b) Mention one example for :

1. A good conductor matter for heat and electricity.
2. Plants that reproduce by spores.

Question 4

A Write the scientific term :

1. Energy is neither created nor destroyed, but it can be transformed into another form.
2. Mass measuring unit.
3. Temperature at which liquid state changes into gaseous one.
4. It is the smallest part in matter that can exist freely, having the properties of a substance.
5. An alloy which is used in making heating coils.
6. The simplest pure form of matter and cannot be analyzed into simpler form.

B Rewrite the following sentences after correcting the underlined words :

1. Carbon is symbolized by **Ca**.
2. Animals with external support are such as **reptiles**.
3. Friction turns **potential** energy into heat energy.
4. From substances that float on the surface of water is **copper**.
5. Resource of permanent energy is **nuclear energy**.
6. Aluminium is from **liquid** elements.

C Cross out the unsuitable word from each of the groups below :

1. Locust - Mosquito - Spider - Cockroach - Flies.
2. Lion - Tiger - Dog - Wolf - Armadillo.

21 El-Behira Governorate — Ismail Elhabrouk Formal Language School

Answer the following questions :

Question 1

A Choose the correct answer :

1. The monoatomic liquid is ....
   a. Hg b. Ag c. Mg d. Br

2. The heat of the Sun is transferred to us by ....

a. convection. b. radiation.
c. conduction. d. conduction and radiation.

3. The rule which is used to find the electronic configuration for the first four energy levels is ....

a. 2^2n b. $2n^2$ c. $2n$ d. n^2

4. From gymnosperms plants is ....

a. wheat. b. pine. c. maize. d. pea.

5. An object of mass 1 kg moves at speed 4 m/s., so it has a kinetic energy = ... joule.

a. 16 b. 8 c. 64 d. 4

6. When atomic number of an element equals its mass number, this means that there aren't .... in the atom of this element.

a. electrons b. protons c. neutrons d. photons

B Give reasons for each of the following :

1. When a zebra mates a donkey, they can't produce fertile individuals.
2. The volume of a mixture of water and alcohol is less than the sum of their volumes before mixing.
3. There are front teeth extending outward in hedgehog .
4. Balloons which filled with helium gas rise up in air.

Question 2

A Write the scientific term for each of the following :

1. It is the atom which gains a quantum of energy.
2. The basic classification unit for living organisms.
3. The simplest pure form of matter which can't be analyzed chemically into simpler form.
4. It is the heat condition which determines whether heat transfers from or to an object when it comes in contact with another.

B Mention one use or importance for each of the following :

1. Nickel-chrome alloy.
2. Solar cell.
3. Palm legs in ducks.
4. Stainless steel alloy.

C Find the number of neutrons, number of electrons and its chemical activity for each of the following atoms :

1. $^{27}_{13}Al$ 2. $^{20}_{10}Ne$





Question 3

A Complete the following statemetns :

1. .... solution is a good conductor of electricity, but .... solution is a bad conductor of electricity.
2. Simple cell converts .... energy into .... energy.
3. Spiders are classified from .... but .... is classified from myriapods.
4. Potassium $_{19}K$ has .... electron/s in the outermost energy level, but $_{18}Ar$ has .... electron/s in the outermost energy level.

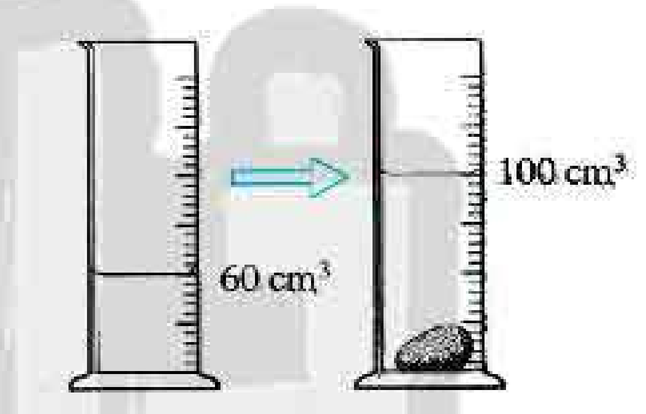
B What do you expect in each of the following cases ... ?

1. Predatory plants can't capture insects.
2. Increasing mass of an object. (Concerning its density)
3. Friction between bicycle wheels and a rough surface.

C Study the opposite figure which represents :

The volume of water before and after put a stone on it.

Find the density of this stone if its mass = 80 gm?



Question 4

A Correct the underlined words in the following statements :

1. The atom mass is concentrated inside the **electrons**.
2. Measuring unit of weight is **joule**.
3. In rodents the incisors number in the lower jaw is **three pairs**.
4. **Gold** is from very active metals.

B Compare between :

1. Ammonia gas and hydrogen chloride. (in terms of : no. of elements - no. of atoms)
2. Hibernation and aestivation. (in terms of : definition - example)

C Two players play volley ball, If the mass of the ball is 1.5 kg and gravity is 10 m/s², Find :



1. Potential energy at position (1) that represents the maximum height, if the net at height = 2m.
2. Mechanical energy at position (2) that represents the ground.

22 El-Minia Governorate

Minia Directorate
Kafr El-Mansoura Language School

Answer the following questions :

Question 1

A Complete the following sentences :

1. .... and .... are teethless mammals.
2. Light posts in streets are painted from time to time to protect them from ....
3. An object of 20 N weight is placed at a height of 5 m, has potential energy equals ....
4. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.

B Write the chemical symbols of :

1. Sliver. 2. Calcium. 3. Aluminium. 4. Helium.

C State one difference between :

1. A rabbit and a squirrel.
2. An element and a compound.

Question 2

A Choose the correct answer :

1. The property of electric conduction is distinguishing factor between ....
   a. iron and copper. b. wood and plastic. c. iron and wood. d. plastic and glass.
2. The scorpion belongs to ....
   a. insect. b. myriapods. c. arachnids. d. mammals.
3. Heat transfers from heater by ....
   a. conduction and radiation.
   b. radiation and convection.
   c. conduction and convection.
   d. radiation only.

B Give reasons for :

1. When adding an amount of water to alcohol the volume of mixture is less than the sum of their volumes before being mixed.
2. The equation ($2n^2$) is not applied on levels higher than 4^{th} level.
3. Wood floats on water surface, while a piece of iron sinks.
4. The freezer is found at the top of the fridge.

C Write the scientific configuration for :

1. $^{24}_{12}Mg$
2. $^{16}_{8}O$

PART 3

Question 3

A Write the scientific term :

1. Energy is neither created nor destroyed, but it can be transformed into another form.
2. The modification in behaviour, structure or biological function of living organism's organs to become more adapted to the environmental conditions where it lives.
3. Energy gained or lost to transfer an electron from one energy level to another.

B On determining iron density using a piece of iron of mass 78 gm the piece immersed in 100 cm^3 of water, the water increases up to 110 cm^3. Calculate iron density .

C What happens if ... ?

The camel exchanges its pad with horse's hoof.

Question 4

A Put (✓) or (✗) :

1. The positive pole in the simple cell is lead. ( )
2. The motion of gaseous molecules is limited. ( )
3. Neutrons are found inside the nucleus and carries positive charges. ( )

B Mention one example for :

1. Solid substance has low melting point.
2. Camouflage in insect.

C What's meant by ... ?

1. Melting point.
2. Mechanical energy.

23 Assiut Governorate — Governmental Language Schools

Answer the following questions :

Question 1

A Write the scientific term for each of the following sentences :

1. Number of the positive protons in nucleus of the atom.
2. Energy stored in the object due to the work done on the object.
3. Energy gained or lost to transfer an electron from an energy level to another.
4. The basic unit of classification in living organisms.
5. Imaginary places in which electrons can move according to their energies.
6. It is the mass of unit volume of the substance.

B **Mention one example of each of the following :**

1. Very active element.
2. Device converts electric energy into light energy and heat energy.
3. Liquid element its molecule consists of one atom.
4. Permanent source of energy.
5. Species of birds adapted by bird migration.
6. Mammals have paddles for swimming.

C **Compare between each of the following :**

Rodents and lagomorphs. (According to number of teeth in the upper jaw - example).

Question 2

A **Give reasons for :**

1. It is very hard to fragmentize a piece of iron with your fingers.
2. The atom is electrically neutral.
3. Hedgehog has front teeth extending outwards.
4. Neon atom ($_{10}Ne$) does not enter a chemical reaction through the ordinary conditions.

B **Choose the correct answer :**

1. The property of electric conduction is a distinguishing factor between : ....
   a. iron and copper. b. wood and plastic.
   c. iron and wood. d. copper and aluminium.
2. As doubling height to which an object is raised from ground, so the ....
   a. kinetic energy is increased to its double value.
   b. potential energy is increased to 3 times.
   c. potential energy is increased to its double value.
   d. mechanical energy is increased to 4 times.
3. Energy is neither created nor destroyed, but it can be transformed into another form of energy, this law is known as law of..............
   a. conservation of energy. b. conservation of matter.
   c. kinetic energy. d. Earth's gravity.
4. The scorpion belongs to ....
   a. insects. b. myriapods. c. arachnids. d. mammals.
5. Mechanical energy is converted into heat energy by means of ....
   a. electric generator. b. electric heater.
   c. friction among moving particles with each other. d. electric motor.

PART
3

6. The symbol which represents silver element is ....

a. S b. Si c. Au d. Ag

7. .... are from the animals which don't have a body support.

a. Reptiles b. Snails c. Jellyfishes d. Birds

8. Pea plant belongs to .... plants.

a. fern b. monocotyledon c. dicotyledon d. gymnosperm

Question 3

A Complete the following :

1. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.
2. .... and .... are teethless mammals.
3. Heat is transferred through solids by ....
4. .... is from the plants that reproduce by the formation of spores whereas .... is from the plants that produce seeds inside cones.
5. The product that results from a combination of atoms of different elements with constant weight ratios is ....
6. .... and .... are used in classifying plants.

B If the mass of an empty glass beaker 75 gm, and the mass of a beaker containing liquid 135 gm and the volume of the liquid measured by graduated cylinder 100 cm^3. Find the density of this liquid.

C Give an example to show the adaptation of the following living organisms with the environmental conditions :

1. Duck. 2. Dieonea plant.

Question 4

A Put (✓) or (✗) in front of the following sentences and correct the wrong one :

1. Temperature is directly proportional to the kinetic energy of the particles. ( )
2. Convection is a way, which the heat is transferred through gases and space. ( )
3. Neutrons are particles, which are negatively charged of negligible mass and revolve around the nucleus. ( )

B What is meant by the following ... ?

1. Heat energy.
2. Melting point.

C **A stone of 3 kg mass falls from 6 m height, what is its potential energy? And what is its kinetic energy? In each of the following :**

1. At the start of falling.
2. At height 2 m.
3. On reaching ground. (considering gravity acceleration = 10 m/sec^2.)

D **Study the following atoms, then answer :**

Points of comparison	$^{35}_{17}Cl$	$^{4}_{2}He$
1. Number of electrons in outermost energy level of each atom.	....	....
2. Number of neutrons inside nucleus of each atom.	....	....
3. Number of energy levels which have electrons of each atom.	....	....

24 Luxor Governorate — Science Inspectorate

Answer the following questions :



Question 1

A **Choose the correct answer :**

1. .... is the monoatomic liquid molecule.
   a. Bromine b. Mercury c. Iodine
2. .... is an example of plants that reproduce by seeds.
   a. Adiantum b. Vougheir c. Bean
3. By increasing the kinetic energy of particles, their .... increases.
   a. weight b. temperature c. volume
4. The electric energy is converted into kinetic energy in ....
   a. electric lamp. b. electric fan. c. electric heater.
5. .... bird migrates in winter.
   a. Quail b. Duck c. Sparrow

B **What is meant by ... ?**

1. Micro-organisms.
2. Conservation law of energy.

C **Write the symbol of each one of the following elements :**

1. Gold .... 2. Sodium .... 3. Oxygen ....
4. Carbon .... 5. Phosphorus ....





PART 3

Question 2

A Complete the following statements :

1. The nucleus of the atom contains .... and ....
2. The intermolecular spaces among solid molecules are............. but .... in gases.
3. In photosynthesis process, ... energy changes into .... energy.
4. Heat is transferred in three methods which are .... , ... and ....
5. .... , ... and .... are examples of insectivorous plants.

B Cross out the odd word :

1. Extinction - Aestivation - Hibernation - Birds migration.
2. Amoeba - Euglena - Clover - Paramecium.

Question 3

A Put (✓) or (✗) with correcting the false ones :

1. Water molecule is composed of two atoms of two elements. ( )
2. Equal masses of different substances have the same volumes. ( )
3. Hedgehog has front teeth extending outwards. ( )
4. Scorpion and spider are from arachnids. ( )
5. When a stone falls down, its kinetic energy decreases. ( )

B Write the scientific term for each of the following :

1. The amount of energy gained or lost to transfer an electron from an energy level to another.
2. The stored energy in an object due to the work done on it.
3. The basic classification unit of living organisms.

C Give reasons for :

1. The atom is electrically neutral.
2. You feel warm when you rub your hands together in winter.
3. When a zebra mates a donkey, they can't produce fertile individuals.

Question 4

A Mention two examples of each of the following :

1. Animals with soft bodies : .... , ...
2. Camouflage : .... , ...

B Write the electronic configuration of the following atoms, then calculate the number of neutrons in each atom :

1. $^{24}_{12}Mg$ 2. $^{40}_{18}Ar$

C Problems :

1. The density of alcohol is 0.8 gm/cm^3. Find the volume of 80 gram of it.
2. Find the potential energy of an object, whose mass is 6000 gram when it is found at a height of 10 m from the ground. (gravity acceleration = 10 m/s^2).

25 Aswan Governorate — M.M.Yaakoub Formal Language School

Answer the following questions :

Question 1

A Complete the following sentences :

1. The hydrogen molecule consists of ...., while the helium molecule consists of ....
2. Friction turns ....energy into .... energy.
3. Heat transfers by convection in .... and ....
4. .... and ....are from plants that reproduce by spores.
5. The frog is an example for .... , while jerboa is an example for ....

B Calculate :

The kinetic energy of an object its mass is 2 kg and moving at a speed of 5 m/s.

Question 2

A Choose the correct answer :

1. Silver is symbolized by ....
   a. Hg b. Au c. Ag d. Cu
2. Attraction force between solid molecules is ....
   a. large. b. small. c. very small. d. not found.
3. The number of energy levels in the heaviest atom is ....
   a. 7 b. 8 c. 18 d. 32
4. Resource of permanent energy is ....
   a. The Sun. b. Coal. c. Petrol. d. Nuclear reactions.
5. The cockroach belongs to ....
   a. insects. b. myriapods. c. arachnids. d. mammals.

B Give reasons for :

1. Atom is electrically neutral.
2. Some plants pounce insects.



Question 3

A Write the scientific term for each of the following :

1. The temperature at which a matter changes from a liquid state into gaseous one.
2. The smallest individual unit of matter which can share in a chemical reaction.
3. Energy is neither created nor destroyed, but it is transformed into another form.
4. A modification in behaviour, structure, biological function of a living organism's organs to be more adjustable with the environmental conditions where it lives.
5. The ability of some living organisms to be hidden from their enemies or preys.

B Mention the formula by which you can calculate :

1. The density. 2. The number of electrons in each energy level.

Question 4



A Choose from (B) what suits it from (A) :

(A)	(B)
1. Julius	a. Insect
2. Scorpion	b. Rodent
3. Sloth	c. Myriapod
4. Rat	d. Lagomorph
5. Rabbit	e. Arachnid
	f. A teethless mammal

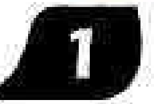
B Write the electronic configuration of the following atoms :

1. $^{27}_{13}Al$ 2. $^{40}_{18}Ar$

26 South Sinai Governorate — Tur Sinai Directorate

Answer the following questions :

Question 1



A Complete :

1. Protons are particles with .... charges, while electrons are particles with .... charges.
2. Potential energy = ... × ....

3. An alloy of .... is used in making jewels, while an alloy of .... is used in making cooking pots.
4. Hawks have .... beaks, while ducks have .... beaks.
5. Heat transfers through solids by ...., while through non-material media by ....

B Compare between :

1. Element and compound (According to definition only).
2. Insects and arachnids (According to number of legs- examples).

C Study the opposite figure then :

1. Mention the name of the opposite device.
2. Label the figure.
3. Write the change of energy in this device.

(3) (1) (2) + -

D Write one importance of :

1. The front teeth in hedgehog.
2. Helium gas.

Question 2

A Choose the correct answer :

1. The number of atoms is equal to the number of elements in .... molecule.
   a. water b. hydrogen chloride c. oxygen
2. Among elements which has a great difficulty to react with oxygen of air is ....
   a. potassium. b. sodium. c. gold.
3. The activity of birds during the daylight and bats during night is considered as an example of .... adaptation.
   a. functional b. anatomical c. behavioural
4. When an object is thrown upwards its ....
   a. potential decreases. b. speed decreases. c. mechanical energy decreases.
5. In car dynamo the energy changes from ....
   a. heat to mechanical. b. electric to heat. c. mechanical to electric.

B Study the opposite figure which represents the nucleus of an element, then find :

1. The mass number.
2. The number of energy levels having electrons.
3. This element active or inactive? Give reason for your chosen.

+19 ±20

C Write an example of :

1. Liquid element composed of two atoms.
2. An insectivorous plant.

PART 3

D Write the chemical symbols of the following elements :

1. Silver. 2. Iron 3. Phosphorus 4. Sodium

Question 3

A Write the scientific term :

1. Elements react with atmospheric oxygen when they are exposed to humid air.
2. The smallest part of matter which can exist in a free state and keep the properties of matter.
3. Energy is neither created nor destroyed, but it is converted from one form to another.
4. Plants that can't be distinguished into roots, stems and leaves.
5. The ability of some living organisms to be hidden from their enemies or to capture the preys in the predatory species.

B Cross out the odd word and write the scientific term of others :

1. Iron - Copper - Aluminium - Plastic.
2. Amoeba - Paramecium - Vougheir - Euglena.
3. Convection - Melting - Radiation - Conduction.

C A graduated cylinder contains 100 cm^3 from a liquid its density 0.8 gm/cm^3. Calculate :

1. The liquid mass. 2. The volume of 4 gram of the same liquid.

Question 4

A Put (✓) or (✗) ,then correct the wrong one :

1. The volume of a mixture of water and alcohol is equal to the sum of their volumes before mixing. ( )
2. The chemical reaction takes place between atoms according to the number of electrons in their outermost energy levels. ( )
3. Chemical pesticides cause electromagnetic pollution for water, air, and soil. ( )
4. Birds and mammals have external support. ( )
5. The horse hoof ends in a thick flat one to help horse go through the rocky soil. ( )

B Give reasons for :

1. Pine plant is a gymnosperm.
2. The fuel inside the car is similar to the food inside the body of living organisms.
3. It is easy to shape metals, while it is difficult to shape sulphur.
4. Bat can fly although it is from mammals.

C Two objects, object (A) its mass 8 kg at 6 m height from the Earth's surface, and object (B) of weight 50 N at 10 m from the Earth's surface, which of the two objects store more potential energy. (Given that gravity acceleration = 10 m/s^2).

Final Examinations 2020

PART 3



Final Examinations of some Governorates.

1 Cairo Governorate — Nozha Language Schools

Question 1

A Complete the following statements :

1. .... and .... are considered as forms of energy.
2. The oxygen molecule consists of two .... atoms, while the ammonia molecule consists of one .... atom and three hydrogen atoms.
3. Limbs are modified into wings in bats for ...., while into paddles in whales and dolphins for .... in water.
4. The attraction force among the molecules of copper is .... than that between molecules of water.
5. Scorpion has .... pairs of legs, while ants have .... pairs of legs.
6. The heat transfers by convection through .... and .... materials.

B Cross the odd word out :

1. Aluminium / Sulphur / Copper / Iron.
2. Jellyfish / Armadillo / Earthworm / Octupus
3. Helium / Oxygen / Neon / Argon.

Question 2

A Choose the correct answer :

1. The atom is electrically ....
   a. positive. b. neutral. c. negative.
2. .... are from animals that have an external support.
   a. Mammals b. Snails c. Birds
3. The produced energy by burning the fuel is .... energy.
   a. potential b. nuclear c. heat
4. The volume of a mixture of 300 cm^3 of water and 200 cm^3 of ethyl alcohol is .... 500 cm^3.
   a. less than b. more than c. equals
5. Secretion of poison in the snakes is a .... adaptation.
   a. structural b. functional c. behavioral



6. The number of electrons that saturates an energy level (n) = ...

a. n^2 b. 2n c. $2n^2$

7. The electric cell is composed of .... solution with two different metals dipped in.

a. a salt b. an alkali c. an acid

B Put (✓) or (✗) :

1. As we go further from the nucleus, the energy of the energy level decreases. ( )
2. The heat transfers from the lower temperature object to the higher temperature object. ( )
3. Mercury is a liquid element that its molecule composed of one atom. ( )
4. Chemical pesticides and car exhaust are from the harms of technology applications. ( )
5. Scolopendra and euglena are from myriapods. ( )

C Write the importance of each of the following :

1. Gold-copper alloy
2. Car dynamo.

Question 3

A Correct the underlined words :

1. The symbol of **copper** is Ca while **F** is the symbol of phosphorous.
2. Frogs undergo **aestivation** in winter to overcome the decreasing of temperature.
3. **Boiling** point is the temperature at which matter changes from solid into liquid state.
4. Friction changes the **potential** energy into **electric** energy.
5. **Wood** is a good conductor of heat and electricity.
6. The mechanical energy is the sum of **heat** energy and **light** energy.
7. The density equals mass divided **area**.

B Give reasons for :

1. Camel's legs end in a broad pad and thick skin.
2. Argon atom ($_{18}Ar$) doesn't enter a chemical reaction through the ordinary conditions.

C Calculate the potential energy of an object of weight 50 newtons that placed at height 5 metres.

Question 4

A Write the scientific term :

1. The smallest individual unit of matter which can share in chemical reaction.

2. It is a modification in the living organism body structure, function or behavior to be adapted with its environmental conditions.
3. It is a permanent resource of energy.
4. An amount of energy that gained or lost to transfer an electron from one energy level to another.
5. The way of transferring the heat through solids.

B The figure represents the electronic configuration of the atom of an elements Determine :

1. The atomic number.
2. The mass number.
3. The number of energy levels.
4. The number of electron in the last energy level.

C Match from column (B) what is suitable for column (A) :

(A)	(B)
1. Chameleon	a. reproduce by formation of spores.
2. Voughair	b. colours itself with the dominant colours of surrounding environment to capture the prey.
3. The jerboa	c. from the insectivorous plants.
4. Drosera	d. undergoes aestivation in summer to escape from high temperature.
5. Rat	e. is an example of rodents.

2 Cairo Governorate — Lycee Bab El Louk

Answer the following questions :

Question 1

A Complete the following statements :

1. The matter in .... state has a definite shape and definite volume.
2. Technology has negative effects like ....
3. An alloy of ....is used in making jewels.
4. In the simple electric cell, ... energy is converted into .... energy.

5. The pendulum can convert potential energy into .... energy.

6. Activity of bats during night is considered .... adaptation.

B Identify :

1. Species.
2. Melting point.

Question 2

A Correct the underlined words :

1. If the density of a matter is 2 g/cm^3 and its volume is 50 cm^3 , the mass equals 25 g.
2. Heat is transferred through the space by **conduction**.
3. Water molecule is consisted of one oxygen atom and two **nitrogen** atoms.
4. Molecules of liquid element consisted of one atom is the **bromine**.
5. Intercellular spaces among molecules of solid state are **medium**.
6. From plants reproduce by formation of spores **palms** plant.

B Give reasons for :

1. Piece of iron sinks in water.
2. Camel's legs has flat pad.

Question 3

A Choose the correct answer to complete the following statements :

1. Rat has ....
   a. two pairs of incisors in each jaw.
   b. one pair of incisors in each jaw.
   c. three pairs of incisors in each jaw.
   d. no correct answer.
2. The Sun is ....
   a. resource of permanent energy.
   b. resource of non-permanent energy.
   c. not an energy resource.
   d. (a) and (c).
3. In the radio cassette inside the car the ....
   a. electric energy is converted into mechanical energy.
   b. light energy is converted into heat energy.
   c. electric energy is converted into kinetic energy.
   d. electric energy is converted into sound energy.
4. Atom symbol of potassium element is ....
   a. Hg
   b. Cu
   c. P
   d. K

5. Some substances need heat to get soften such as ....

a. coal. b. iron. c. sulphur. d. rubber.

6. Secreting sweat by skin is considered .... adaptation.

a. structural b. functional c. behavioral d. no correct answer

B **Write the electronic configuration of the following atoms :**

1. $_{11}Na$ 2. $_{10}Ne$

Question 4

A **Calculate the potential energy of an object its mass is 4 kg. is placed at 5 m. height (consider g = 10 m/s^2).**

B **Mention only one difference between**

1. Element and compound. 2. House fly and scorpion. 3. Electron and proton.

C **What happens in each of the following cases ... ?**

1. When the energy of the electron is more than the energy level in which the electron rotates.

2. The freezer is found at the lower part of the fridge.

3. Friction between the frames of bicycle's wheel with the brake.

3 Cairo Govern rate — Notre Dame Des Apotres School Shoubra

Answer the following questions :

Question 1

A **Complete the following sentences :**

1. The hydrogen molecule consists of ...., while the argon molecule consists of ....

2. The density is the .... of unit volume of substance and its measuring unit is ....

3. .... and .... are used in classifying plants.

4. When the speed of the pendulum is maximum the .... energy is maximum and .... energy is minimum.

5. Simple electric cell changes .... energy into .... energy.

6. The cockroach is from .... but scorpion is from ....

B Calculate :

1. The potential energy of an object whose mass is 10 kg. and placed at 5 m. height from the ground (Considering gravity acceleration 10 m/s^2).
2. Kinetic energy of an object whose mass is 1 kg. and moving at speed of 5 m/s.
3. The mass of piece of sulphur whose volume is 10 cm^3 and its density is 2.1 gm/cm^3.

C Look at the opposite figure, then answer :

K L M

(±12) 2 8 1

1. Find number of protons.
2. Find the mass number.
3. Find the atomic number.
4. Find this element activity.

Question 2

A Give reasons for each of the following :

1. Wood piece floats on water surface, while a piece of lead sinks in it.
2. Equal volumes of different substances have different masses.
3. Camel's legs end with broad pad.
4. Some plants catch and feed on insects.
5. The freezer is found at the top of fridge.
6. The volume of a mixture of water with alcohol is less than sum of their volumes before being mixed together.

B Mention one example for :

1. Solid substance has low melting point.
2. Insectivorous plants.
3. Unicellular organism.
4. Alloy used in making heating coils.

C Write the symbols of the following element :

1. Mercury.
2. Sodium.
3. Lead.
4. Zinc.

D Write electronic configuration for :

1. $_{19}K$
2. $_{9}F$
3. $_{13}Al$
4. $_{10}Ne$

Question 3

A Write the scientific term for :

1. The sum of potential and kinetic energies of a body.
2. The temperature at which matter begins to change from solid to liquid.

3. A group of terrestrial plants that reproduce by formation spores.
4. The number of positive protons in nucleus.
5. The work done during the motion of an object.
6. Invertebrates that are characterized by having number of jointed legs.

B What is the meant by ... ?

1. Aestivation. 2. Quantum. 3. Species. 4. Temperature.

C Correct the underlined words :

1. Heat transfers through solids by **convection**.
2. Work = force × **time**.
3. Bean plant belongs to **gymnosperms** plants.
4. A piece of iron its mass 156 gm. and its volume is 20 cm^3, so its density = **8.7** gm/cm^3.

Question 4

A Choose the correct answer :

1. The colour property distinguishing factor between ....
   a. flour and table salt. b. iron and gold. c. O_2 and CO_2. d. salt and sugar.
2. The molecule of gaseous element that consists of one atom is ....
   a. oxygen. b. hydrogen. c. helium. d. mercury.
3. Heat transfers through liquids by ....
   a. conduction. b. convection.
   c. radiation. d. convection and radiation.
4. From the animals which don't have body support are ....
   a. raptile. b. snails. c. jellyfish. d. mammals.
5. Scorpion has .... legs.
   a. 4 b. 8 c. 44 d. 6
6. The molecule of ammonia consists of .... atoms.
   a. 2 b. 6 c. 4 d. 1

B What happens when ... ?

1. An electron loses an amount of energy.
2. Doubling the weight of an object (concerning its potential energy).
3. Using water in putting out petrol fires.
4. The number of protons changes (To mass and atomic number).

C Choose the odd word out then write the relation between the rest words :

1. Lion – Tiger – Wolf – Armadillo.
2. Ice – Wood – Cork – Iron.
3. Reptiles – Fish – Birds – Worms.
4. Na – Cu – Al – Fe.

4 Cairo Governorate — East Nasr City Directorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The measuring unit of density is ...., while the measuring unit of work is ....
2. .... alloy is used in making jewels, while .... alloy is used in making heating coils.
3. Liquid element its molecule is composed of one atom is ...., while that composed of two atoms is ....
4. The attraction force among gaseous molecules is ....
5. .... is the amount of energy gained or lost to transfer an electron from an energy level to another.
6. Armadillo belongs to .... mammals and hedgehog belongs to .... mammals.

B Give reasons for :

1. The atom is electrically neutral.
2. On adding 50 cm^3 of alcohols to 50 cm^3 of water the total volume not equal 100 cm^3.
3. Some plants pounce insect.
4. Kinetic energy increases four times as the velocity of the moving body is doubled.

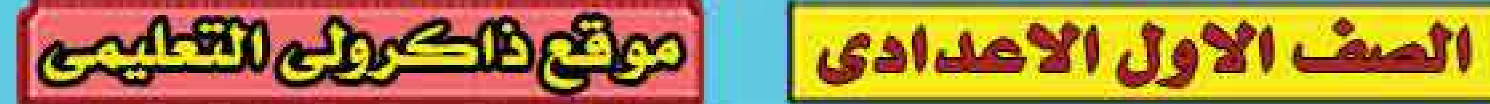
C What is meant ... ?

1. Density of water equals 1 gm/cm^3.
2. Mass number of sodium is 23.

Question 2

A Write the scientific term :

1. The basic classification unit for living organisms.
2. The simplest pure form of a matter that can't be analyzed into simpler form.

3. The ability to do work or to make a change.
4. Energy is neither created nor destroyed, but it is converted from one form to another.
5. The ability of some living organisms to be hidden from their enemies.

B Compare between :

1. Arachnids and insects. (according to the number of legs).
2. Solids – Liquids and gases. (according to intermolecular space and intermolecular force).

C Calculate the density of iron cube its mass 78 gm. If that piece was immersed in 100 cm^3 of water the level of water rises to 110 cm^3.

Question 3

A Choose the correct answer :

1. Mammal animal that has one pair of incisors in each jaw ....
   a. squirrel. b. rabbit. c. lion. d. no correct answer.
2. The nucleus of .... atom doesn't contain neutrons.
   a. neon b. hydrogen c. oxygen d. no correct answer
3. The atomic number of an atom of an element, its (M) energy level contains 2 electrons is ....
   a. 8 b. 10 c. 12 d. 14
4. Heat transfers by .... through liquid and gas.
   a. conduction b. convection c. radiation d. no correct answer
5. The density of 12 gm. of pure iron is .... the density of 2 gm. of iron.
   a. more than b. equal to c. less than d. no correct answer

B Write the electronic configuration for the following :

1. $^{39}_{19}K$ 2. $^{35}_{17}Cl$ 3. $^{40}_{18}Ar$ 4. $^{7}_{3}Li$

C A force of 20 newton acts on a body to move it a distance 1.5 m. in the same direction of force. Calculate the work done.

Question 4

A Give an example for :

1. An inert gas. 2. Insectivorous plant. 3. Monocotyledon plant.

B Mention the name of the device which used to change :

1. Chemical energy to electric energy.
2. Electric energy to kinetic energy.

C If you have two elements ($^{14}_{7}N$ - $^{24}_{12}Mg$) answer the following :

1. Write the name of each one.
2. The atomic number of each one.

5 Cairo Governorate — Degla Valley Language School

Answer the following questions :

Question 1

A Complete the following sentences :

1. The electron has .... charge, while the proton has .... charge.
2. Heat transfers through solids by ...., while heat transfers through liquids by ....
3. The dynamo converts the .... energy into .... energy.
4. From the examples of dicotyledon plants are .... and ....
5. The front limbs of whales and dolphins are modified into ...., while the front limbs of bats are modified into ....

B What is meant by ... ?

1. The melting point.
2. The law of conservation of energy.

Question 2

A Choose the correct answer :

1. .... is from the animals that make hibernation in winter.
   a. Desert snail b. Jerboa c. Frog
2. .... is a permanent resource of energy.
   a. Sun b. Coal c. Natural gas
3. All of the followings belong to arachnids except ....
   a. locust. b. scorpion. c. spider.
4. The electric lamp changes the .... energy into light and heat energy.
   a. sound b. electric c. mechanical
5. The smell property is a distinguishing factor between ....
   a. iron and gold. b. wood and plastic. c. perfume and vinegar.
6. The energy level N is saturated by .... electrons.
   a. 8 b. 18 c. 32

B **Give reasons for :**

1. A piece of wood floats on the water surface, while an iron nail sinks in water.
2. Some plants as drosera and dieonea pounce insects.
3. The atom is electrically neutral.

C **Calculate the potential energy of an object its mass is 2 kg. at a height 3 m. knowing that the gravity acceleration is 10 m/s^2.**

Question 3

A **Write the scientific term :**

1. The work done during the motion of the objects.
2. The insect which looks like the branches of the plant.
3. The smallest part of matter that can exist freely having the properties of matter.
4. The basic classification unit for living organisms.

B **Mention the use of :**

1. The copper-gold alloy.
2. The sharp and crooked beaks in hawks.
3. The simple electric cell.

C **Draw the electronic configuration of the following atoms :**

1. $^{35}_{17}Cl$ 2. $^{27}_{13}Ne$

Question 4

A **Correct the underlined words :**

1. The molecules of inert gases consist of **two** atoms.
2. Friction turns the mechanical energy into **magnetic** energy.
3. Iron and copper are **bad** conductors of heat.
4. The rat belongs to the **lagomorphs**.
5. The kinetic energy **decreases** by increasing the mass and speed of objects.
6. The chemical symbol of silver is **Si**.

B **Mention an example for :**

1. A plant reproduces by formation of spores.
2. The liquid element consists of two atoms.
3. A teethless mammal.
4. A solution that is good conductor of electricity.

C Compare between :

1. Insects and arachnids (according to the number of legs).
2. Solids and gases (according to the intermolecular spaces).

6 Cairo Governorate — Dr. Ahmed Zewail Distinguished Language School

Answer the following questions :

Question 1

A Complete the following statements :

1. .... is the positive charges that exists in the nucleus.
2. The intermolecular spaces between iron molecules are ....
3. .... is the way of transferring heat through space.
4. .... is an animal from edentates.
5. .... is the sum of protons and neutrons.
6. .... is the sum of potential and kinetic energy.

B Calculate the mass of piece of sulpher, its volume 5 cm^3 , knowing that the density of sulpher 2.1 gm/cm^3.

C Write the symbol of :

1. Sodium. 2. Calcium. 3. Iron. 4. Fluorine.

Question 2

A Write the scientific term :

1. The temperature at which the substance begin to change from solid to liquid.
2. The monoatomic liquid.
3. The atom that gains a quantum of energy.
4. A device changes solar energy to electric energy.
5. The basic classification unit of living organisms.
6. The plants which devour insects to get protein.

B Give reasons for :

1. The atom is electrically neutral.
2. Neon is an inert gas.

3. Heater is put at the bottom of the room.
4. Spiders are from arachnids.

C Cross the odd word out :

1. Mosquitoes – Scorpion – Ant – Bee.
2. Sound – Heat – Weight – Mechanical.
3. Sugar solution – Salt solution – Acidic solution – Alkali solution.
4. Ammonia gas – Water – Hydrogen – Carbon dioxide.

Question 3

A Choose the correct answer :

1. In simple pendulum P.E at maximum height = ...
   a. K.E. b. zero. c. M.E. d. 10 joules.
2. The third energy level is saturated by .... electrons.
   a. 2 b. 10 c. 18 d. 8
3. .... are from the animals which don't have body support.
   a. Reptiles b. Snails c. Jellyfish d. Birds
4. Heating coils are made up of .... alloy.
   a. iron-copper b. nickel-iron c. chrome-copper d. nickel-chrome
5. .... reproduce by forming spores.
   a. Vougheir b. Pine c. Bean d. Wheat
6. Car engine changes at first chemical energy to .... energy.
   a. heat b. electric c. magnetic d. light

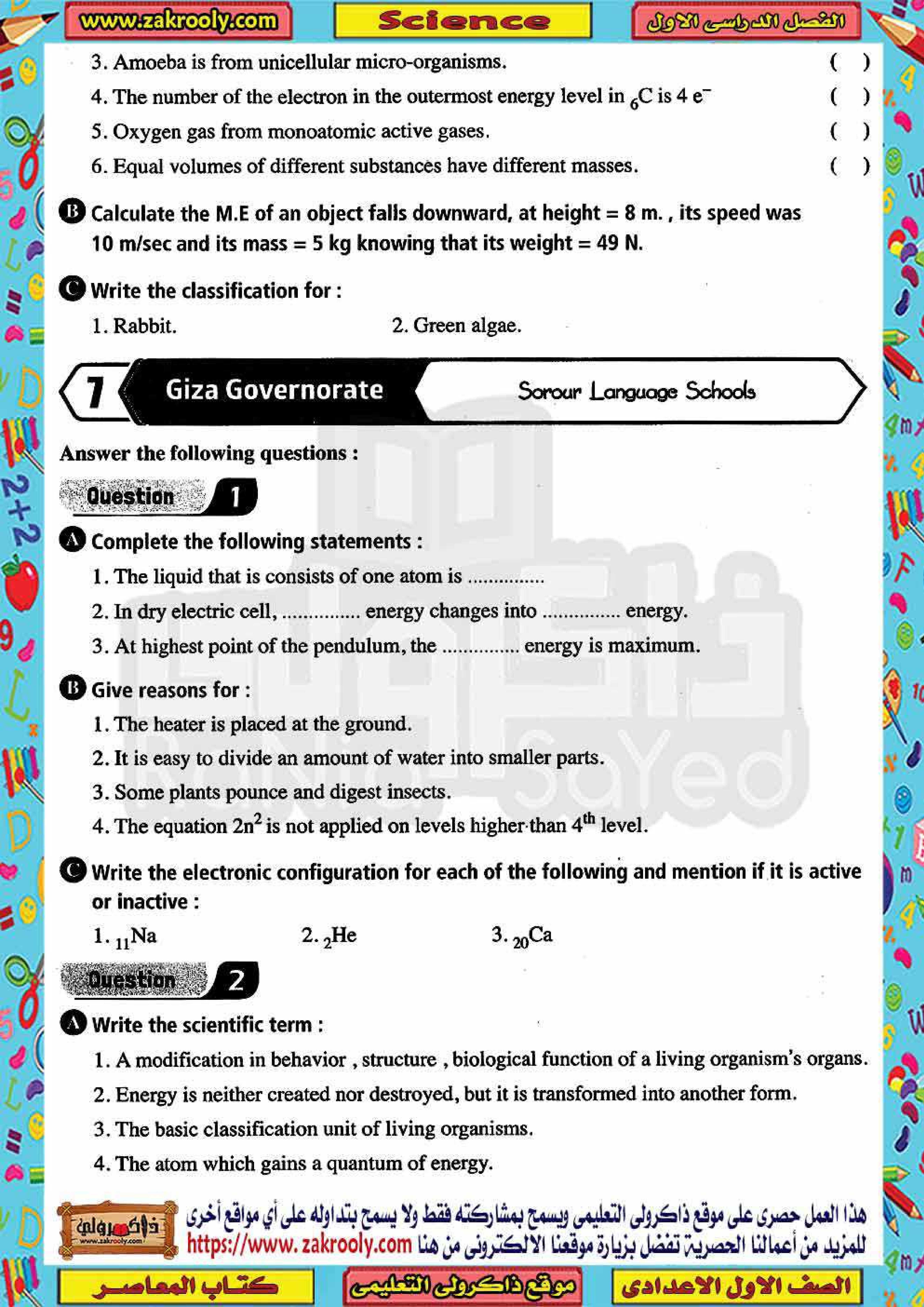
B Find atomic number, mass number, number of neutrons, then make the electronic configuration for $^{39}_{19}K$.

C 1. The name of the opposite device is ....
2. The positive pole is ....
3. The negative pole is ....
4. The liquid in the basin is ....

Question 4

A Put (✓) or (✗) :

1. The volume of a mixture of 30 cm^3 of water and 20 cm^3 of alcohol is 50 cm^3. ( )
2. Secreting poison in snakes is a behavioral adaptation. ( )



3. Amoeba is from unicellular micro-organisms. ( )

4. The number of the electron in the outermost energy level in $_{6}C$ is 4 e^- ( )

5. Oxygen gas from monoatomic active gases. ( )

6. Equal volumes of different substances have different masses. ( )

B **Calculate the M.E of an object falls downward, at height = 8 m. , its speed was 10 m/sec and its mass = 5 kg knowing that its weight = 49 N.**

C **Write the classification for :**

1. Rabbit. 2. Green algae.

7 Giza Governorate — Sorour Language Schools

Answer the following questions :

Question 1

A **Complete the following statements :**

1. The liquid that is consists of one atom is ....
2. In dry electric cell, ... energy changes into .... energy.
3. At highest point of the pendulum, the .... energy is maximum.

B **Give reasons for :**

1. The heater is placed at the ground.
2. It is easy to divide an amount of water into smaller parts.
3. Some plants pounce and digest insects.
4. The equation $2n^2$ is not applied on levels higher than 4^{th} level.

C **Write the electronic configuration for each of the following and mention if it is active or inactive :**

1. $_{11}Na$ 2. $_{2}He$ 3. $_{20}Ca$

Question 2

A **Write the scientific term :**

1. A modification in behavior , structure , biological function of a living organism's organs.
2. Energy is neither created nor destroyed, but it is transformed into another form.
3. The basic classification unit of living organisms.
4. The atom which gains a quantum of energy.

B **Compare between :**

1. Electron and proton (concerning the charge and site).
2. Potential energy and kinetic energy (concerning definition and its value on the ground).

C **If you have two cubes (A) & (B) of wood whose density is 0.5 gm/cm^3 Calculate :**

1. The mass of cube (A) knowing that its volume is 50 cm^3
2. The volume of cube (B) knowing that its mass is 10 gm.

Question 3

A **Put (✓) or (✗) and correct the wrong one :**

1. Gymnosperms are flowering plants. ( )
2. Heat is transferred through solids by conduction. ( )
3. Inert gases are monoatomic. ( )
4. In solar cells, the solar energy is converted into heat energy. ( )

B **What happens when ... ?**

1. Leaving a piece of iron exposed to air.
2. Friction of the bicycle wheels to a rough surface.
3. The bones of the front limbs & fingers of monkey are not elongated.

C **Cross the odd word & write the scientific term of the others :**

1. Locust – Mosquito – Spider – Cockroach – Flies.
2. Butter Ice – Iron – Wax.
3. $_{10}Ne$ – $_{18}Ar$ – $_{2}He$ – $_{12}Mg$

Question 4

A **What is meant by ... ?**

1. Mechanical energy.
2. The density of water is 1 gm/cm^3.

B **Write the symbols of the following element :**

1. Aluminium. 2. Silver. 3. Mercury. 4. Calcium.

C **Two objects, object (A) its mass 8000 gm. at 6 m. height from the earth's surface, and object (B) of weight 50 N. at 10 m. height, from earth's surface, which of the two objects stores more potential energy.** (Given gravity acceleration = 10 m/sec^2)

8 Giza Governorate — Abou Elnomrous Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. In solar cell, ... energy changes into .... energy.
2. The monoatomic liquid is ...., while .... is diatomic liquid.
3. Heat transfers through solids by ...., while through liquids by ....
4. The front limbs of whale are modified into .... to helps it to ....

B Give an example for :

1. Very active metal.
2. Dicotyledon plant.
3. A device changes electric energy to heat energy.
4. A solid substance which is soft at room temperature.

C An object whose mass is 2 kg. moving at a speed 5 m/sec. Calculate its kinetic energy.

Question 2

A Write the scientific term :

1. The basic classification unit of the living organisms.
2. The sum of potential energy and kinetic energy.
3. The spaces between molecules.
4. The smallest building unit of matter which can exist freely.
5. Energy is neither created nor destroyed but it is converted from one from to another.
6. The ability of some living organisms to hide from their enemies.

B Write the electronic configuration and calculate the number of neutrons of :

1. $^{35}_{17}Cl$ 2. $^{20}_{10}Ne$ 3. $^{16}_{8}O$

C Mention one difference between :

1. The electron and the proton.
2. Insects and arachnids.

Question 3

A Choose the correct answer :

1. From animals with internal support ....
   a. octopus. b. fish. c. snail. d. jellyfish.
2. Silver is symbolized by ....
   a. Hg b. S c. Si d. Ag
3. Chemical energy can stored in ....
   a. car battery. b. stretched spring.
   c. raising a load upwards. d. car lamps.
4. .... is an example for plants that reproduce by spores.
   a. Pine b. Bean c. Vougheir d. Wheat
5. .... is a permanent source of energy.
   a. Petrol b. The Sun c. Coal d. Battery
6. The third energy level is saturated by .... electrons.
   a. 2 b. 10 c. 18 d. 8

B Give reasons for :

1. The freezer is found at the top of the fridge.
2. The shallow water birds have long and thin beaks.
3. It is easy to divide an amount of water to smaller parts.

C What is meant by ... ?

1. Mass number. 2. Hibernation.

Question 4

A Correct the underlined words :

1. The molecule of a compound consist of **similar** atoms.
2. Insectivorous plants absorb nitrogen to form **fats**.
3. Frication produces **light** energy.
4. **Kinetic** energy stored in the object due to work done on it.
5. In the simple electric cell the positive pole is made of **zinc**.
6. Liquids have a **fixed** shape.

B Mention one use or function for the following :

1. Nickel-chrome alloy.
2. Simple electric cell.

3. Palm legs in geese.
4. Long arms and fingers in monkey.

C What happens when ... ?

1. When an electron gains a quantum of energy.
2. Increasing the speed of a moving object to double its value when the mass is constant (concerning the kinetic energy).

9 Giza Governorate — El-Sadat Gov. Language Schools

Answer the following questions :

Question 1

A Complete the following :

1. The animals with external support such as .... and ....
2. Silver symbol is .... whereas sodium symbol is ....
3. In the simple electric cell the .... energy changes to .... energy.
4. The liquid element its molecule composed of one atom is .... , while the liquid element composed of two atoms is ....

B Mention the difference between :

1. Potassium and gold. (according chemical activity).
2. Bat and whale (according to the adaptation of the front limbs).

C Find the kinetic energy of a body its mass is 500 gram and moves with speed of 6 m/s.

Question 2

A Choose the correct answer :

1. In the rodent the number of incisors in the upper jaw is ....
   a. one pair. b. two pairs. c. three pairs. d. none.
2. Heat transfers from Sun to Earth by ....
   a. conduction. b. convection. c. radiation. d. no answer.
3. When the object is throw upward the .... of object decreases.
   a. mass b. heat c. potential energy d. kinetic energy
4. Spider belongs to ....
   a. insects. b. arachnids. c. myriapods. d. vertebrates.

B Compare in table between :

Car dynamo and car cassette (according to the energy used and energy produced).

C Write the name and draw the electronic configuration of the following atoms :

1. $_{20}Ca$ 2. $_{15}P$ 3. $_{18}Ar$

Question 3

A Write the scientific term of the followings :

1. The sum of potential and kinetic energy.
2. Pollution produced from the networks of cellular phone.
3. The sum of positive protons and neutral neutrons in the nucleus of atom.
4. Energy is neither created nor destroyed, but it is converted from one form to another.

B Give reasons for :

1. Freezer is found at the top of the fridge.
2. Frogs hibernate in winter.
3. The atom is electrically neutral in its ordinary state.

Question 4

A When copper piece its mass 156 gm. is put in graduated cylinder containing 100 cm^3 of water, the reading of cylinder becomes 120 cm^3. Calculate the density of copper.

B What happens when ... ?

1. The legs of camel do not end with thick flat pads.
2. Adding 100 cm^3 of ethyl alcohol to 400 cm^3 of water.

C Give an example for each of the followings :

1. An alloy used in making heating coil.
2. Insectivorous plants.
3. Solid substance has low melting point.
4. Permanent source of energy.

10 Giza Governorate — Awseem Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The symbol of .... is (Ag), while the symbol of .... is (Hg).
2. Bird migration is considered as .... adaptation.

3. Heat transfers by .... through material media and non-material media.
4. In photosynthesis process, ... energy is changed into .... energy.
5. Electrons revolve around the .... in orbits known as ....

B What happens when ... ?

1. A compass is put near to a wire of simple electric cell.
2. Increasing the speed of moving object to double and why ?

Question 2

A Write the scientific term for each of the following sentences :

1. The sum of potential and kinetic energies.
2. The number of positive protons in the nucleus.
3. Temperature at which solid state begins to change into liquid one.
4. The simplest pure form of matter which can't be analyzed to simpler.

B What is meant by each ... ?

1. Hibernation.
2. Law of conservation of energy.

C Compare between each of the following :

1. Ammonia gas and hydrogen chloride (according to : number of elements and number of atoms).
2. Solid and gas (according to intermolecular spaces and forces).

Question 3

A Give reasons for each of the following :

1. The atom is electrically neutral.
2. The shallow water birds have long and thin beaks.
3. Wood floats on water surface, while a piece of iron sinks in it.
4. Some plants are insectivorous plants.
5. Electric wires are made up of copper.

B If the work done to move a box a distance of 5 metres equal 20 joules. Calculate the force.

C Write the chemical symbol of :

1. Iron.
2. Gold.
3. Copper.
4. Zinc.

Question 4

A Write the mathematical relationship that binds between each of the following :

1. The weight of an object and its mass.
2. The number of electrons that saturates certain energy level.
3. Density, mass and volume of a substance.

B Write the electronic configuration for the following elements, then calculate the number of protons and mention the type of the element.

1. $^{40}_{20}Ca$ 2. $^{20}_{10}Ne$ 3. $^{35}_{17}Cl$ 4. $^{4}_{2}He$

C Give one example for :

1. Liquid diatomic element. 2. Soft body organism.

11 Alexandria Governorate — Al-Safwa Integrated School

Answer the following questions :

Question 1

A Complete the following statements :

1. .... alloy is used in making jewels, while .... alloy is used in making heating coils.
2. The monoatomic liquid is .... , while the diatomic liquid is ....
3. The electric lamp changes .... energy into .... energy.
4. From teethless mammals are .... and ....
5. Heat is transferred in solids by ...., while in liquids by ....

B Give one example :

1. A very active metal. 2. Noble gas.
3. Animal with soft body. 4. Arachnids.

Question 2

A Write the scientific term :

1. The temperature at which matter begins to change from solid to liquid.
2. The simplest pure form of matter which can't be analyzed.
3. The ability to do work or make a change.
4. The basic classification unit of living organisms.
5. The ability of some living organisms to be hidden from enemies.
6. Energy is neither created nor destroyed but it is converted from one form to another.

B Give reasons for :

1. Atom is electrically neutral. 2. Heater is placed on the ground.

C Correct the underlined words :

1. Measuring unit of energy is **newton**.
2. In solar heater, the solar energy is converted into **kinetic** energy.

3. In winter frog undergoes **aestivation**.

4. The chemical symbol of potassium is **PO**.

Question 3

A Choose the correct answer :

1. The symbol of silver is ....

   a. Ar b. Ag c. Au d. Al

2. .... is an example of plant that reproduce by spores.

   a. Adiantum b. Bean c. Voughier d. (a) and (c)

3. The measuring unit of density is ....

   a. cm/gm. b. gm/cm^3. c. kg/cm. d. gm/cm.

4. An object its mass is 2 kg. and moving at speed 4m/s, so its kinetic energy = ...

   a. 16 joule. b. 64 joule. c. 32 joule. d. 2 joule.

5. Chemical energy can be stored in ....

   a. car battery. b. stretched spring. c. lamp. d. waterfalls.

B Compare between each of the following :

1. Rodents and lagomorphs (according number of teeth in each jaw).
2. Solids and gases (according to attraction force).

Question 4

A Put (✓) or (✗) and correct the wrong ones :

1. The first energy level (K) is saturated with 8 electrons. ( )
2. Mechanical energy is converted into heat energy by friction. ( )
3. Sun is the permanent source of energy. ( )
4. Bean plant is from monocotyledon. ( )

B Write the electronic configuration of each of the following atoms :

1. ${}^{24}_{12}Mg$ 2. ${}^{23}_{11}Na$ 3. ${}^{20}_{10}Ne$ 4. ${}^{16}_{8}O$

Then find the number of neutrons

C On determining iron density by using a piece of iron of mass 78 gm. the piece is immersed in 100 cm^3 of water the water increases up to 110 cm^3. Calculate iron density.

12 Alexandria Governorate — El Montaza Zone Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Density is the .... of unit volume of the substance and its unit is ....
2. The liquid element its molecule is composed of one atom is ...., while that composed of two atoms are ....
3. .... and .... are teethless mammals.
4. Heat is carried from the electric heater to our body by .... and ....

B Write the symbols of the following elements :

1. Lithium. 2. Silver. 3. Chlorine.

C A stone of 5 kg. falls from 8 m, What is its potential energy ? (Gravity acceleration = 10 m/s^2)

1. At the start of falling. 2. At the height of 2 m.
3. On reaching ground.

Question 2

A Write the scientific term :

1. Imaginary places in which electrons can move according to their energies.
2. The way by which the heat is transferred throw gasses and liquids.
3. An example of animal with external support.
4. The sum of potential energy and kinetic energy.
5. The basic classification unit of living organisms.

B Mention one use for the following :

1. Simple electric cell. 2. Nickel-chrome alloy. 3. The palm legs in geese.

C What happens when ... ?

1. Three atoms of hydrogen combine with one atom of nitrogen.
2. An object is thrown upwards.
3. Increasing the mass of a body to double (According to its density).

Question 3

A Correct the underlined words :

1. The solar cell changes the solar energy into <u>heat</u> energy.

2. The simple electric cell consists of **a sugary solutions** dipped in it two different metals.
3. Vougheir is the fern plant that reproduces by formation of **seeds**.
4. Heat is transferred from the Sun to the Earth by **convection**.
5. Banana tree carries **small-sized** leaves.

B Cross out the unsuitable word :

1. Locust – Mosquito – Cockroach – Spider.
2. Beans – Pea – Pine – Corn.
3. Petroleum -- wood – Cork – Iron.

C Give reasons for :

1. The intercourse (mate) between dog and cat impossible.
2. The motion of the children's swing is like that of the pendulum.
3. The atom is electrically neutral.

Question 4

A Choose the correct answer :

1. An object of mass 2 kg. is moving at a speed of 4 m/s. has a kinetic energy .... joules.
   a. 16   b. 64   c. 32
2. In solar heater, solar energy is converted into .... energy.
   a. light   b. electric   c. heat
3. .... is from the rodents that undergo aestivation.
   a. Rat   b. Jerboa   c. Desert snail
4. The colour property is a distinguishing factor between ....
   a. Flour–sugar.   b. silver–gold.   c. oxygen–helium.
5. The third energy level is saturated by .... electrons.
   a. 2   b. 18   c. 8
6. A substance is solid and can't be soften by heating ....
   a. copper.   b. sulphur.   c. aluminum.

B Write the electronic configuration :

1. $^{23}_{11}Na$ 2. $^{20}_{10}Ne$

Then determine each of the following :

1. Atomic number.
2. Mass number.
3. Number of electrons.
4. Number of Neutrons.
5. Number of energy levels.
6. Chemical activity.

13 Alexandria Governorate — East Zone Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The liquid element which its molecule is composed of one atom is .... , while that is composed of two atoms is ....
2. Some solutions are good conductors of electricity as .... and .... , while others are bad conductors of electricity as ....
3. Heat is transferred through gases by ...., while transferred through solids by ....
4. From plants that have large leaves .... and from that have small leaves ....
5. Secretion of sweat in humans is a .... adaptation.

B Show by drawing the electronic configuration of the following elements :

1. $_{16}S$
2. $_{6}C$

C What is meant by ... ?

1. Boiling point.
2. Heat energy.

Question 2

A Write the scientific term :

1. The behavior that desert animals do to avoid the high temperature in summer.
2. The result of combination between two or more atoms of different elements with constant weight ratios.
3. The gases that do not take part in the chemical reaction.
4. The stored energy in an object due to the work done on it.
5. Imaginary places around the nucleus in which the electron move according to their energy.
6. A group of animals similar in their shape and can get intermated together to produce fertile individuals.

B Give reasons for each of the following :

1. Technology has negative effects in the environment.
2. The kinetic energy of a moving object increases by the increase of its mass.
3. The rule ($2n^2$) is not applied on the energy levels greater than four.

C **Write the symbols of the following elements :**

1. Aluminium.
2. Phosphorus.

Question 3

A **Put (✓) or (✗) and correct the wrong ones :**

1. In solar cells, the solar energy is converted into heat energy. ( )
2. The intermolecular spaces among molecules of solids very large. ( )
3. Scorpion has three pairs of jointed legs. ( )
4. Heating coils are made up of nickel-chrome alloy. ( )
5. Temperature is directly proportional to the kinetic energy of particles. ( )

B **Mention one importance of :**

1. The front teeth of hedgehog.
2. The thick flat pad at the end of camel's limb.

C **An object has a kinetic energy 64 joule and is moving at a velocity 4 m/s. Find the object mass.**

Question 4

A **Choose the correct answer :**

1. Chemical energy can be stored in ....
   a. car battery.
   b. raising a load up wards.
   c. stretched spring.
   d. car lamps.
2. The chemical activity of the element depends on the number of ....
   a. neutrons.
   b. protons.
   c. electrons in the outer level.
   d. levels filled with electrons.
3. An element has 2 electrons in the (L) level, so its atomic number is ....
   a. 2 b. 4 c. 6 d. 8
4. All of the following are active elements except ....
   a. ${}_{1}H$ b. ${}_{6}C$ c. ${}_{7}N$ d. ${}_{18}Ar$
5. Cooking pans are made up of ....
   a. iron only.
   b. aluminium only.
   c. stainless steel only.
   d. (b) and (c)
6. The substances that float on water surface is ....
   a. iron. b. cork. c. aluminium. d. copper.

B **What happens when ... ?**

1. Using water to extinguish petrol fires.
2. Dipping two different metals connected by copper wire in an acidic solution.

C **Give one example for each of the following :**

1. An animal with external supported body.
2. A teethless animal.
3. A plant that reproduces by spores.
4. A mammal which its front limbs are modified into wings.

14 Kalyobia Governorate — Banha Directorate

Answer the following questions :

Question 1

A **Complete the following sentences :**

1. Hawks have .... beaks to tear the prey, whereas ducks have .... beaks to filter food from water.
2. Electrons are particles with .... charge, while protons are particles with .... charge.

B **Show by words, what are these symbols mean ?**

1. Al 2. O 3. H 4. Fe.

C **Compare between :**

Elements and compounds in only one point (one example on each one).

D **Transfer the following table to your answer paper and fill it :**

Element symbol	Atomic number	Mass number	Number of protons	Number of electrons	Number of neutrons
$^{14}_{7}N$	....	....	....	....	....
$^{12}_{6}C$	....	....	....	....	....

Question 2

A **Put (✓) or (✗) and correct the wrong ones :**

1. Intermolecular spaces are tiny in solids. (   )
2. Insectivorous plants can absorb nitrogenous substances from insects. (   )
3. From substances that float on the surface of water is copper. (   )

B **Find the weight of an object its mass 50 kg, knowing that the Earth's gravitational acceleration is 9.8 m/sec^2.**

C **Choose the odd word out and say why do you choose it ?**

1. Height – Weight – Mass – Potential energy.
2. Ant – Bee – Spider – Cockroach – Locust.
3. Drosera – Dieonea – Cactus – Halophila.
4. Bean – Pea – Maize – Pine – Wheat.

D **Correct the underlined word :**

1. Maize is from **dicotyledon** plants.
2. Octopus is from **supported body** animals.
3. A horse hoof is an example on **behavioral** adaptation.

Question 3

A **On determining iron density using a piece of iron of mass 78 gm. The piece is immerged in 100 cm^3. of water, the water increases up to 110 cm^3. Calculate iron density.**

B **Choose the right answer :**

1. The number of energy levels in the heaviest atoms is ....
   a. 7 b. 8 c. 32 d. 18
2. From inert gases ....
   a. nitrogen. b. helium. c. oxygen. d. bromine
3. Heat transfers from Sun to Earth by ....
   a. convection. b. radiation.
   c. conduction. d. conduction and convection.
4. In car engine, ... energy of the fuel is changed into heat and mechanical energy.
   a. chemical b. electric c. light d. solar

C **Define :** 1. Matter. 2. Kinetic energy.

D **Illustrate :** The electronic configuration for 1. $^{23}_{11}Na$ 2. $^{40}_{20}Ca$

E **Draw a diagram to show the simple electric cell.**

Question 4

A **A ball was launched upwards and vertically at a speed 3 m/sec. up to a height 4m. Calculate the mechanical energy (work done) of the ball if its weight is 5 newton and has a mass of 0.5 Kg.**

B **Write the scientific term :**

1. They are metals which find great difficulty in reacting with oxygen.
2. The ability to exert (do) work or make a change.

C **Give reasons for :**

1. Water is not used to put out petroleum fire.
2. Freezer of the fridge is found at the top.

D **What happens when .... ?**

1. No aestivation occurs to jerboa.
2. If the front limbs of the bat are not modified into wings.

E **Match :**

(A)	(B)
1. Migration of quail bird	a. Scorpion.
2. Soft bodies	b. Mosquitoes.
3. Insects	c. Behavioral adaptation.
4. Myriapods	d. Armadillo.
	e. Scolopendra.
	f. Earthworm.

15 El-Menofia Governorate — Shebin Elkom Directorate

Answer the following questions :

Question 1

A **Complete the following sentences :**

1. A piece of metal its mass is 25 g. and its volume is 10 cm^3, when it is placed in water it will .... (water density 1g/cm^3.)
2. Kinetic energy increases by increasing .... and .... of the object.
3. The density is directly proportional to .... and inversely proportional to ....
4. Drosera and Dieonea are examples for ....
5. Some substances are solids which cannot be soften if heated such as .... and ....
6. The networks of wireless transmitters of cellular phones cause .... pollution but car exhaust causes .... pollution.

B Write the electronic configuration of the following atoms and calculate the number of neutrons in each atom ? ($^{24}_{12}Mg$ – $^{35}_{17}Cl$)

Question 2

A Write the scientific term for each of the following sentences :

1. It is the temperature at which a substance begins to change from a liquid state into a gaseous state.
2. It is a form of energy which transfers from a higher temperature object to a lower temperature object.
3. Animals have one pair of incisors in each jaw.
4. It is the amount of energy lost or gained by an electron when it transfers from one energy level to another.

B What happen when & Why ... ?

1. Dipping two different metals connected by a wire in an sugary solution.
2. Removal the front teeth of hedgehog.

C Compare between :

Sodium and copper according to (React with oxygen and Chemical activity).

Question 3

A Put (✓) or (✗) :

1. Molecules of the same substance are different from each other. ( )
2. All mammals walk on four limbs. ( )
3. Work done = Force × Displacement. ( )
4. Activity of birds during the daylight and bats at night are examples of functional adaptation. ( )
5. The electrons are distributed to fill the "K" level before filling the "L" level. ( )
6. Intermolecular space between molecules of the matter is directly proportional with its intermolecular forces. ( )

B Give reasons for :

1. Equal masses of different substances have different volumes.
2. It is easy to divide an amount of water into smaller parts.
3. The freezer is found at the top of fridge.
4. Spider is not from insects.

Question 4

A Give one example showing each of the following :

1. Molecules of gaseous elements are composed of one atom.
2. A device converts electric energy into mechanical energy.
3. Hibernation in amphibians.
4. Micro-organisms.

B A stone of 5 kg. mass falls from 8 m. height, find its potential energy and its kinetic energy at the start of falling. (gravity acceleration = 10 m/s^2.)

C Explain each of the following :

1. The moving pendulum keeps its mechanical energy.
2. The way of reproduction different in vougheir plant from wheat plant.
3. $_{10}Ne$ atom is more stable than $_{17}Cl$ atom.

16 Gharbia Governorate — El Salam Private Language School Tanta

Answer the following questions :

Question 1

A Choose the correct answer :

1. Equal masses of different substances have .... volumes.
   a. different b. constant c. equal
2. When a substance sinks in water, that means its density is .... the density of water.
   a. equal to b. less than c. more than
3. The .... matter doesn't take the shape of the container.
   a. solid b. liquid c. gaseous
4. The molecule of oxygen is composed of .... atom(s).
   a. one b. two c. three
5. The particles which revolve around the nucleus of an atom of element are ....
   a. neutrons. b. protons. c. electrons.
6. .... are from the animals which don't have a body support.
   a. Reptiles b. Snails c. Jellyfish

B **Mention the difference between each of the following :**

1. Insects and arachnids.
2. Active metals and inactive metals.

C **Give reasons for :**

1. Car engine is important to the car.
2. The heater is placed on the ground.

Question 2

A **Put (✓) or (✗) and correct the wrong ones :**

1. Argon atom ($^{40}_{18}Ar$) has four energy levels. ( )
2. The melting point of wax is equal to the melting point of table salt. ( )
3. The kinetic energy of a static object equals zero. ( )
4. In the electric cell, the electric energy is converted into chemical energy. ( )
5. Insectivorous plants can't absorb the nitrogenous substances from the soil needed to make fat. ( )
6. The energy level "K" has the highest energy. ( )

B **Write the electronic configuration of the following atoms :**

1. $^{16}_{8}O$
2. $^{35}_{17}Cl$

C **What is meant by ... ?**

1. Micro-organisms.
2. Adaptation.
3. Transfer of heat by radiation.

Question 3

A **Complete the following statements :**

1. The density is the .... of unit volume of a substance and its measuring unit is ....
2. An alloy of .... is used in making jewels, while an alloy of .... is used in making coils.
3. The smallest part of the element that can take part in a chemical reaction is known as ....
4. The symbol of sodium atom is ...., while that of sulphur atom is ....
5. .... is the basic unit of classification in living organisms.

B **A ball was lunched upwards and vertically at a speed 3 m/s. up to a height 4m.**
Calculate the mechanical energy of the ball if its weight is 5 newton and has a mass 0.5 Kg.

C Write the names of elements of the following symbols :

1. H 2. Cu 3. Fe 4. C

Question 4

A Write the scientific term for each of the following sentences :

1. The pollution produced from the networks of wireless transmitters of cellular phones.
2. The measuring unit of energy.
3. The positively charges particles in the nucleus of an atom.
4. The spaces that found among the molecules.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Wind generator	a. is a source of nuclear energy.
2. Radio cassette	b. is a source of heat energy.
3. Electric lamp	c. is a source of electric energy.
4. Oven	d. is a source of light energy.
	e. is a source of sound energy.

C What happens when ... ?

1. The pendulum passes its rest position (concerning potential and kinetic energy).
2. The electron gains a quantum energy.
3. Leaving a piece of iron exposed to moist air for a period of time.
4. Rubbing your hands together.

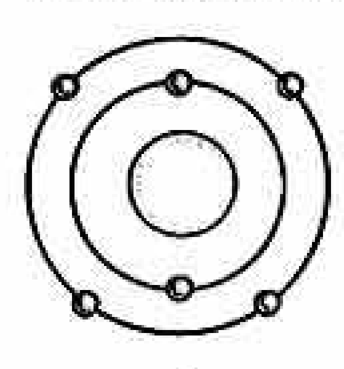
17 Dakahlia Governorate — Talkha Directorate

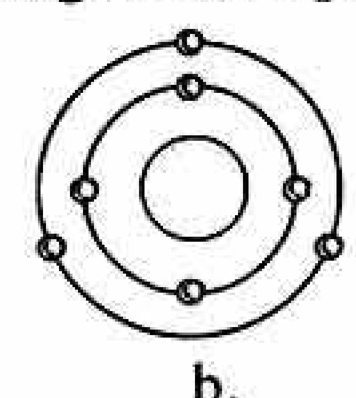
Question 1

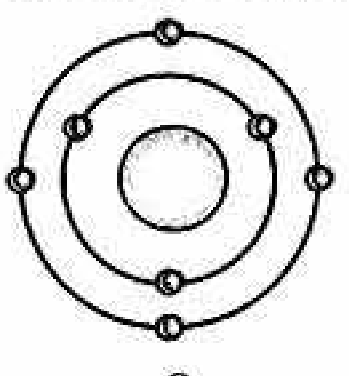
A Choose the correct answer :

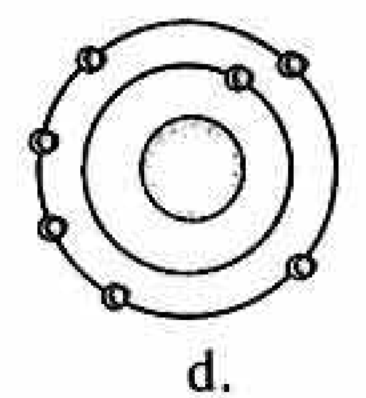
1. The density of 12 gm. of pure iron is .... the density of 2 gm. from it.
   a. more than b. less than
   c. equal to d. no correct answer
2. The element whose atomic number is 10 and it doesn't take part in chemical reactions, it is similar in it's chemical properties the element whose atomic number equals ....
   a. 9 b. 11 c. 16 d. 18

3. Which of the following atoms represents an excited atom ... ?


a.


b.


c.


d.

4. Amoeba, euglena and paramecium differ from each other in the ....

a. number of teeth. b. number of legs.

c. kind of support. d. way of movement.

5. .... insect exactly looks like the plant branches.

a. Stick b. Beetle c. Leaf d. Locust

B **Your classmate has seen a bird, he doesn't knows this bird's name but he managed to describe it as a bird with a sharp beak and the legs end in fingers with strong claws. According to your classmate story, answer the following questions :**

1. What is the type of adaptation in both the beak and leg of this bird ?
2. How many fingers are in each leg ?
3. What type of food does this bird feed on ?

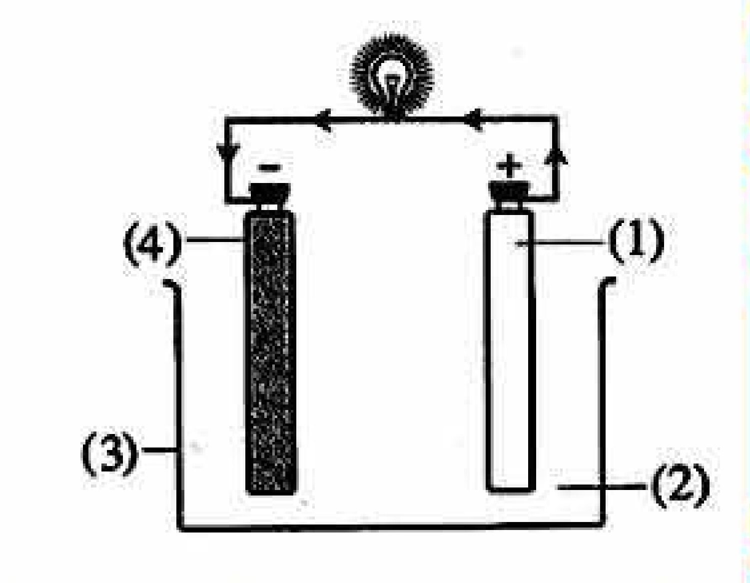
Question 2

A **Put (✓) or (✗) for each of the following :**

1. The fuel inside the car is similar to the food inside the body of a living organism. ( )
2. Heat is transferred in solid materials by radiation. ( )
3. When air is cooled, density decreases, so it falls down. ( )
4. No change in the potential energy when the object moves horizontally. ( )
5. Gymnosperms are classified into monocotyledon and dicotyledon plants. ( )
6. Smell property is a distinguishing factor between perfume and ammonia. ( )

B **From the opposite figure answer the following questions :**

1. Mention the name of the opposite device.
2. Label the fig.
3. Mention the idea of its operation.



Question 3

A Give reasons for each of the following :

1. Disappearance of a little amount of table salt when it is put in a beaker containing water for a period of time.
2. The atom is electrically neutral.
3. The kinetic energy will increase four times as the speed of the moving object is doubled.
4. Car exhaust is considered from the negative effects of technological applications.

B Answer the following :

1. The teacher advised the pupils to lie on the ground when the smoke emitted from any fire. What is your interpretation of the teacher's advise in the light of your understanding of the concept of transferring the heat by convection ?
2. The opposite figure represents a part of a plant.
   a. What is the difference between this plant and bean plant ?
   b. What is the similarity between this plant and cycas plant ?
   c. Mention another example in the same classification of this plant.

Question 4

A Write the scientific term for each of the following sentences :

1. The modification in the behavior of a living organism at specific times of the day or year.
2. The branch of biology that searches for the similarities and differences among living organisms.
3. A group of animals that have one pair of incisors in each jaw.
4. Energy is neither created nor destroyed, but it is converted from one form to another.

B Write the symbol of the following elements :

1. Potassium. 2. Aluminium. 3. Chlorine. 4. Nitrogen.

C A stone, whose mass is 5 kg. is thrown from a height of 8 m. find its potential energy and its kinetic energy :

1. at the beginning of fall.
2. After reaching at a height of 2 m.
3. When the stone reaches the Earth.

(Knowing that the acceleration due to gravity = 10 m/sec^2.).

18 Port Said Governorate — Port Said Integrated Language Schools

Answer the following questions :

Question 1

A Complete the following statements :

1. The front limbs of dolphins are modified into .... to take the role of ....
2. .... and .... are from micro-organisms.
3. Heat is transferred through liquids by ...., while through space by ....
4. The .... belongs to insects, whereas the .... belongs to arachnids.
5. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.
6. In the dynamo, ... energy changes into .... energy.

B Draw the electronic configuration for each of the following elements :

1. ${}^{40}_{18}Ar$ 2. ${}^{7}_{3}Li$ 3. ${}^{24}_{12}Mg$ 4. ${}^{19}_{9}F$

C Give reasons for each of the following :

1. Some plants pounce and predate insects.
2. You feel hot when you touch a hot metallic spoon.
3. Atom is electically neutral.
4. Inert gases can't share in chemical reactions.

Question 2

A Write the word(s) that represent(s) each of the following (scientific term) :

1. The temperature at which matter starts to change from solid to liquid.
2. Ability to do work or to make a change.
3. The branch of biology that searches for the similarities and differences among living organisms.
4. The sum of potential and kinetic energies.
5. The ability of some living organisms to be hidden from enemies or to capture the preys.

B In an experiments to determine water density, the following results are recorded :

1. Mass of an empty glass beaker = 56 g.
2. Mass of the beaker containing water = 156 g.
3. Volume of the water measured by a graduated cylinder = 100 cm^3.

Calculate the water density.

C Write the symbol for each of the following :

1. Chlorine. 2. Aluminium 3. Zinc 4. Silver

Question 3

A Choose from column (B), what suits column (A) :

(A)	(B)
1. Banana plant	a. is from gymnosperms.
2. Wheat plant	b. has small sized leaves.
3. Pine plants	c. is from monocotyledon.
4. Molukhiyah plant	d. is from dicotyledon.
	e. has large sized leaves.

B Compare between each of the following :

1. Solar cell and solar heater (Concerning the energy transformation).
2. Elements and compounds (Concerning the definition and one example for each).

C Correct the underlined words :

1. The nucleus of the atom is **negatively** charged.
2. **Hydrogen** is from inert gases.
3. **Octopus** is from myriapods.
4. **Bromine** is the only liquid metal that its molecule consists of one atom.

Question 4

A Choose the correct answer :

1. .... is from teethless mammals.
   a. Lion b. Cow c. Lizard d. Sloth
2. .... is a permanent source of energy.
   a. Wind b. Fuel c. Food d. The Sun
3. Electric energy is converted into sound energy in ....
   a. car battery. b. car lamps. c. radio cassette. d. pendulum.
4. Taste property is a distinguishing factor between ....
   a. copper and iron. b. vinegar and perfume. c. salt and sugar. d. gold and silver.
5. An object whose mass 2 kg. is moving at speed of 4 m/s. its kinetic energy .... joule.
   a. 16 b. 64 c. 32 d. 128

B Look at the following figure, then answer the following questions :

1. The position(s) at which potential energy is the maximum value.
2. The position(s) at which kinetic energy is the maximum value.

Knowing that the weight of the ball = 20 N.

Calculate the potential energy at position (1).

1

Height = 50m.

2

C What is meant by ... ?

1. The law of conservation of energy.
2. Boiling point.
3. Quantum.

19 Damietta Governorate — Damietta Education Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The simple electric cell converts .... energy into .... energy, while in solar cell .... energy changes into .... energy.
2. An alloy of .... is used in making jewels, while an alloy of .... is used in making heaters coils.
3. The cockroach belongs to .... , whereas the scorpion belongs to .... although both of them are arthropods.
4. Ammonia molecule consists of .... atoms and .... atom.
5. Heat is transferred through air by .... and ....
6. The monoatomic liquid is .... , while .... is diatomic liquid.
7. Some solutions are good conductors of electricity as .... solution, while some solutions don't conduct electricity as .... solution.

B Write the electronic configuration of following elements :

1. $_{17}C$ 2. $_{13}Al$ 3. $_{10}Ne$

Detect the inactive atom during chemical reactions (Give reason).

C When a piece of iron its mass 156 gm. is put in a graduated cylinder containing 100 cm^3 of water the reading becomes 120 cm^3 Calculate the density of iron.

Question 2

A Write the scientific term for the following :

1. The number of negative electrons in the energy levels around the nucleus of the atom.
2. The limited amount of energy needed or loss to transfer an electron from an energy level to another.
3. The ability of some living organisms to be hidden from their enemies.
4. The process by which some animals hide in burrows to overcome low temperature.
5. The temperature at which a matter begin to change from the liquid state to gaseous state.
6. It is a basic classification unit for living organism.

B Give one difference between each of the following :

1. Bean plant and maize plant.
2. Neutron and proton.
3. Fish and snail.
4. Intermolecular forces in solids and in gases.

C Write the symbols of the following elements :

1. Calcium.
2. Silver.
3. Zinc.
4. Potassium.

Question 3

A Give reasons for :

1. The atom is electrically neutral.
2. Drosera plant pounces insects.
3. It is easy to divide an amount of water into small droplets.
4. Some birds have long thin beaks and long thin legs.

B What is meant by ... ?

1. Adaptation.
2. The excited atom.

C What happens when ... ?

1. The front teeth of hedgehog are not extending outwards.
2. Doubling the height of an object (concerning its potential energy).
3. Using water to extinguish petrol fires.

Question 4

A Choose the correct answer :

1. An example for plants that reproduce by spores is ....
   a. adiantum. b. pea. c. bean. d. wheat.
2. From the animals which don't have a body support is ....
   a. snail. b. jellyfish.
   c. fish. d. cartilaginous fish.
3. Heat is transferred by convection through ....
   a. liquids only. b. gases only. c. solid only. d. liquids and gases.
4. When the atomic number of element equals its mass number, this means that there is no ....
   a. electrons. b. protons. c. neutrons. d. nucleus.
5. The third energy level in the atom contains .... electrons.
   a. 2 b. 18 c. 8 d. 32

B Mention the energy transformation in each of the following :

1. Electric heater. 2. Solar oven. 3. Electric bell.

C Correct the underlined words :

1. **Kinetic** energy is stored in the object due to a work done on it.
2. In rodents the incisors number in the lower jaw is **three pairs**.
3. Some animals undergo **hibernation** to overcome the high temperature.
4. Measuring unit of weight is **joule**.
5. **Gold** is from very active metals.

20 Fayoum Governorate — Science Supervision

Answer the following questions :

Question 1

A Complete the following statements :

1. Hawks have .... beaks to tear the prey, whereas ducks have .... beaks to filter food from water.
2. When car lamps and radio cassette are on, there is a change inside the car battery from .... energy into .... energy.
3. Heat is transferred through gases by .... and ....

4. Holders of light bulbs in streets are painted from time to time in order to protect it from ....
5. The hydrogen molecule is consisted of .... atoms, while the argon molecule (inert gas) is consisted of .... atom.
6. If the speed of an object motion increases into the double, its kinetic energy increases into ....
7. The cockroach belongs to ...., whereas the scorpion belongs to ....

B Define :

1. Atom. 2. Species.

Question 2

A Correct the underlined words in the following statements :

1. **Electric energy** = Potential energy + Kinetic energy.
2. **Wind** is a permanent source of energy.
3. **Ammonia** consists of one oxygen atom and two hydrogen atom.
4. **Lagomorphs** have one pair of incisors in each jaw.
5. **Mass number** is known as the number of protons existed in an atom nucleus of an element.
6. An atom third level is saturated with **8** electrons.

B Show one difference between each of the following :

1. The element and compound.
2. Beans and wheat.

C Write the symbols of the following elements :

1. Potassium. 2. Gold. 3. Magnesium. 4. Aluminium.

Question 3

A Write the scientific term for each of the following statements :

1. A modification in a living organism or its body structure or even the biological function of its organs to become more adapted to the environmental conditions where it lives in.
2. The temperature at which matter changes from a solid phase into a liquid one.
3. Energy is neither created nor destroyed but can be transformed into another form.
4. A form of energy which transfers from higher temperature to a lower one.
5. The ability to do work.
6. The simplest pure form of a matter which can't be analyzed simpler.

B **Give reasons for :**

1. The atom is electrically neutral.
2. The bike tyre gets hot once you press the brakes.
3. Forelimbs of whale are modified into paddles.

C **On finding a liquid density through an experiment, the following results were recorded : Mass of an empty glass beaker 100 g. Mass of the beaker containing liquid 150 g. Volume of the liquid measured by a graduated cylinder 100 cm^3. Calculate the liquid density.**

Question 4

A **Choose the correct answer to complete the following statements :**

1. An object of 10 N. weight is placed at 5 m. height, it has a potential energy ....
   a. 50 joule. b. 150 joule. c. 100 joule. c. 200 joule.
2. The handles of cooking pots are made of ....
   a. copper. b. aluminium. c. wood. d. iron.
3. The taste property is a distinguishing factor between ....
   a. sugar and table salt. b. wood and plastic. c. silver and gold. d. coal and iron.
4. The role of technological application is represented in ....
   a. using energy resources and converting energy from form to another.
   b. creating energy from nothing.
   c. storing energy as its form is.
   d. illustrating energy forms.
5. Solids have .... intermolecular force.
   a. strong b. weak
   c. medium d. no correct answer
6. .... is an example for plants that reproduce by spores.
   a. Pine b. Beans c. Vougheir d. Wheat

B **What happens when ... ?**

1. Predator plants can't capture insects for a long period of time.
2. A liquid substance is heated.

C **Write down the electron configuration of the following atoms. Which active and which inactive ?**

1. $^{20}_{10}Ne$ 2. $^{23}_{11}Na$

21 El-Minia Governorate — New Minia Governmental Language School

Answer the following questions :

Question 1

A Choose the correct answer :

1. .... belongs to the animals with no body support.
   a. Octopus b. Mussel c. Hedgehog d. Snake
2. Dynamo converts mechanical energy into .... energy.
   a. electrical b. nuclear c. solar d. chemical
3. An object of mass 2 kg is moving at speed of 4 m/s. has kinetic energy of .... J.
   a. 16 b. 64 c. 32 d. 4
4. .... is a permanent source of energy.
   a. Wind b. Coal c. The Sun d. Water

B Write the chemical symbol of :

1. Iron. 2. Silver. 3. Sodium. 4. Calcium.

C Give reasons for :

1. The atom is electrically neutral in its ordinary state.
2. The heater is placed on the ground.
3. Camel limbs end in a thick flat pad.

Question 2

A Complete the following statements :

1. Heat is transferred through milk by ....
2. .... and .... are from plants that reproduce by spores.
3. Attraction force among the molecules of mercury is ....
4. The front limbs of whale are modified into .... for ....
5. One of the harmful effects of mobile networks is .... pollution.

B Give one difference between each of the following :

1. Bean plant and maize plant.
2. Ammonia molecule and nitrogen molecule.



C An object of density 0.5 gm/cm^3 and volume 10 cm^3. Find its mass ? And if you know the density of water is 1 gm/cm^3. Does this object sink in water ? And why ?

Question 3

A Write the scientific term :

1. The heat state of an object on which the transfer of heat from or to the object depends.
2. The temperature at which the matter begins to change from the solid state to the liquid state.
3. Energy is neither created nor destroyed but it can be transformed into another form.
4. The ability of some body organs and tissues to do a certain function.

B What happens when ... ?

1. The beaks of ducks are narrow and not indented.
2. The electron gains a quantum of energy.
3. Using of water in putting out petrol fires.
4. The height of an object is doubled (according to potential energy).

C Mention one example of each of the following :

1. An insectivorous plant. 2. Camouflage.

Question 4

A Choose the odd word out then mention the relation between the rest :

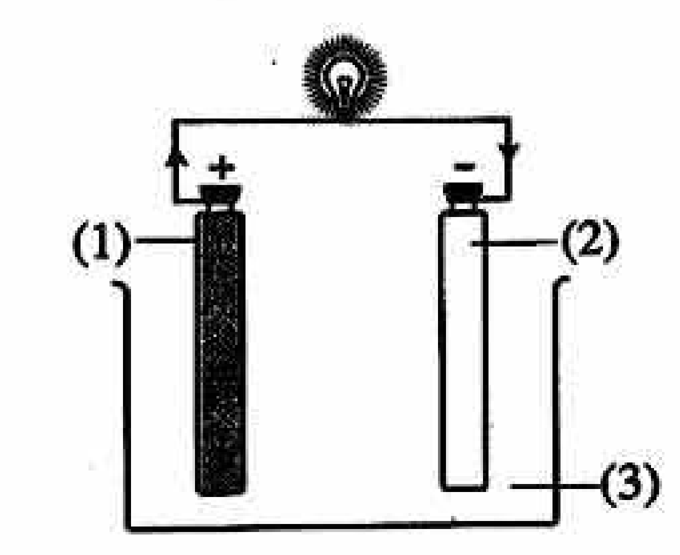
1. $_{7}N$ - $_{10}Ne$ - $_{9}F$ - $_{11}Na$.
2. Mosquito – Spider – Cockroach – Ant.
3. Iron – Copper – Aluminium – Wood.
4. Amoeba – Euglena – Clover – Paramecium.

B Write the electronic configuration of the following atoms :

1. $^{23}_{11}Na$ 2. $^{40}_{20}Ca$

C Look at the opposite figure, then answer :

1. Mention the name of the opposite.
2. Label the figure.
3. This device changes .... energy into .... energy.



22 Assiut Governorate — Assiut Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The density is the .... of unit volume of a substance and its measuring unit is ....
2. Hydrogen molecule is composed of .... atoms, while argon molecule is composed of .... atom.
3. .... is from the plants that reproduce by formation of spores, while .... is from the plants that reproduce by formation of seeds inside cones.
4. Mechanical energy = ... + ...
5. The whale's front limbs are modified into .... to take the role of ....

B What is meant by ... ?

1. Boiling point.
2. The potential energy of an object = 20 joules.

C Write the symbols of the following elements :

1. Sodium. 2. Aluminium.

Question 2

A Give reasons for :

1. A piece of ice changes into water after a period of time when it is left in air.
2. Some plants pounce and digest insects.
3. The freezer is found at the top of the fridge.
4. The atom is electrically neutral.

B Write the electronic configuration of the following elements, then :

1. $^{7}_{3}Li$ 2. $^{24}_{12}Mg$

- Find the number of electrons in the outermost energy leve' in each atom.
- Calculate the number of neutrons in each atom.

C What is the mass of a body, whose kinetic energy is 64 joules and its speed is 4 m/sec ?

Question 3

A Choose the correct answer :

1. The property of electric conduction is distinguishing factor between ....
   a. iron and copper. b. wood and plastic.
   c. iron and wood. d. no correct answer.
2. An object of 20 N. weight and it is placed at a height of 5 m. , so its potential energy is .... joules.
   a. 50 b. 150 c. 100 d. 200
3. If you sit down beside an electric heater, heat is transferred to you by ....
   a. convection. b. radiation.
   c. conduction. d. convection & radiation.
4. Scorpion belongs to ....
   a. insects. b. arachnids. c. myriapods. d. mammals.
5. The sum of the number of protons and neutrons in the nucleus of the atom is known as ....
   a. atomic number. b. valency. c. mass number. d. density.

B Give an example of each of the following :

1. Hibernation in amphibia.
2. Camouflage in insects.

C Mention the difference between each of the following :

1. Rabbit & squirrel. 2. Bean & wheat.

Question 4

A Write the scientific term :

1. A group of animals that have three pairs of jointed legs.
2. A form of energy which is transferred from the object of higher temperature to that of lower temperature.
3. A set similar animals in their shape and can get intermated together to produce fertile individuals.
4. The fundamental building unit of matter that can take part in the chemical reaction.

B Write the odd out and write the scientific term of others :

1. Wheat – Pea – Corn – Bean – Pine.
2. Lion – Tiger – Dog – Wolf – Armadillo.

C State the energy transformation in each of the following :

1. Dynamo. 2. Electric lamp. 3. Motor. 4. Electric bell.

23 Sohag Governorate — El-Balina Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. An alloy of .... is used in making jewels, while an alloy of .... is used in making heating coils.
2. .... and .... are teethless mammals.
3. When a body raised up, the potential energy ...., while the kinetic energy ....
4. .... and .... are used in classifying plants.

B Write the chemical symbols of :

1. Sodium.
2. Calcium.
3. Potassium.
4. Chlorine.

C Give an example for :

1. Camouflage in insects.
2. Aestivation in rodents.
3. A device changes kinetic energy into electric energy.
4. A permanent source of energy.

Question 2

A Write the scientific term :

1. Energy gained or lost to transfer an electron from one energy level to another.
2. Energy is neither created nor destroyed but it can be transformed into another form.
3. The basic unit of classification in living organisms.
4. Number of positive protons in nucleus of the atom.
5. Energy stored in the object due to the work done on the object.
6. Plants can't be distinguished into roots, stems and leaves.

B Give reasons for :

1. The heater is put at the bottom of the room.
2. Workmen melt the solid metals.
3. Atom is electrically neutral.
4. Some animals hibernate in winter.

Question 3

A Choose the correct answer :

1. The following animals have no body support except ....
   a. worms. b. octopus. c. jellyfish. d. fish.

2. When atomic number of an element equals its mass number this means that there aren't .... in the nucleus of this element.
   a. electron b. protons c. neutrons d. photons

3. An object of 20 N. weight is placed at 5 m. height, it has potential energy ....
   a. 50 joule. b. 100 joule. c. 150 joule. d. 200 joule.

4. The number of atoms is equal to the number of elements in .... molecule.
   a. water b. hydrogen chloride c. oxygen d. ammonia gas

B Give one difference between :

1. Insects and arachnids.
2. Rodents and lagomorphs.

C Write down the electronic configuration of the following :

1. $^{23}_{11}Na$ 2. $^{1}_{1}H$ 3. $^{20}_{10}Ne$ 4. $^{40}_{20}Ca$

Question 4

A What is meant by ... ?

1. The density of natural milk 1.03 gm/cm^3
2. Heat energy.

B Put (✓) or (✗), then correct the wrong ones :

1. In solar cells, the solar energy is converted into heat energy. ( )
2. The mass number is the number of protons and electrons. ( )
3. Angiosperms are called flowering plants. ( )
4. The motion of gaseous molecule is limited. ( )

C An object has kinetic energy 64 joule and is moving at velocity 4 m/s. Find the object mass.

24 Aswan Governorate — Science Inspectorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The matter is composed of small units called ...., while these units are consisted of smaller units called ....
2. Frictions turns .... energy into .... energy.
3. .... and .... are teethless mammals.

B What is the different between ... ?

1. Element and compound.
2. Potential and kinetic energies of an object.

C What happens when ... ?

1. You open a perfume bottle in a closed room for a while.
2. Polar bear can't undergo hibernation.

Question 2

A Choose the correct answer :

1. Resource of permanent energy is ....
   a. petrol. b. the Sun. c. nuclear reactions. d. coal.
2. .... is from substances that float on water surface.
   a. Iron b. Copper c. Cork d. Aluminium
3. The example of living organism that undergoes hibernation is the ....
   a. desert snail. b. jerboa. c. frog. d. all the previous.
4. Heat transfer by radiation takes place through ....
   a. liquids only. b. gases only. c. material media and nonmaterial ones. d. metals only.

B Give reasons for the following :

1. Handles of cooking pans are made up of wood or plastic.
2. Solar heater is preferred to gas heater.

C Mention one example for :

1. An insectivorous plant.
2. A device that produces heat energy.
3. A very active metal.

Question 3

A Write the scientific term :

1. The basic classification unit for living organisms.
2. The mass of unit volume of the substances.
3. Sum of protons and neutrons in a nucleus.
4. The work done during the motion of an object.

B Write the electron configuration of the following :

1. $_{11}Na$ 2. $_{17}Cl$ 3. $_{12}Mg$ 4. $_{3}Li$

C Calculate the potential energy of an object its weight is 20 N., placed at 5 m height from the ground.

Question 4

A Put (✓) or (✗), then correct the wrong one :

1. The distance among solid molecules is very large. ( )
2. In car lamps, electric energy changes into light energy. ( )
3. The compound consists from a combination of atoms of one element. ( )
4. The bird activity during the day and the bat during night is from functional adaptation. ( )
5. Iron rusts when it is exposed to dry air. ( )
6. Melting point is the temperature at which the matter changes from solid phase into liquid one. ( )

B What is the importance of ... ?

1. The front teeth of hedgehog. 2. Long arms of monkey.

C Choose the odd word :

1. Oxygen – Nitrogen – Water – Chlorine
2. Lion – Tiger – Dog – Wolf – Armadillo
3. Hibernation – Extinction – Aestivation – Camouflage.
4. Petroleum – Wood – Cork – Iron

25 South Sinai Governorate — Tour Sinai Directorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The chemical symbol of iron element is ...., while S is the chemical symbol for .... element.
2. The mechanical energy = ... + ...

3. Cockroaches is considered from ...., while scorpion is considered from ....
4. The horse foot ends with .... and this type of .... adaptation.
5. The water molecule consists of one atom from .... and two atoms from ....
6. Some solids are soft at ordinary temperature such as ...., while .... cannot be soften if is heated.

B Show the electronic configuration for the following atoms, then show which one is active and which one is inert :

1. $^{40}_{20}Ca$ 2. $^{4}_{2}He$ 3. $^{24}_{12}Mg$

C What is the meant by ... ?

1. The melting point of ice = zero degree celsius.
2. The kinetic energy of an object = 400 joule.

Question 2

A Correct the underlined word from the following :

1. The liquid element which its molecule consists of two atoms is **mercury**.
2. Transfer of heat by **conduction** does not need a material medium.
3. The relation $2n^2$ determines the number **of neutron** in energy level.
4. The networks of cellular phone cause **noise** pollution.
5. **Copper** rode is the negative pole in the simple electric cell.
6. The stored energy in battery car is **potential** energy.

B A metallic ball has 4 Kg mass launched upward to 6 m. hight, calculate the potential energy at maximum Height. Knowing that gravity acceleration = 10 m/s^2.

C Mention each of the following :

1. The way of heat transfer through amount of water.
2. The device which is used in examining of micro-organisms.
3. Edentates (teethless animal).
4. The reason which makes chameleon colours itself with the dominant colours of the environment.

D Determine the energy transformation in each of the following :

1. Electric lamp. 2. Electric generator (dynamo).

Question 3

A Write the scientific term for the following :

1. The simplest pure substance that could not analyzed into simpler form.
2. The number of positive protons inside the nucleus of the atom.

3. The fundamental unit for natural classifying system in living organisms.
4. The plants which can not distinguished into root, stem and leave.
5. A substance that its solution in benzene does not conduct electricity.
6. The energy which transfers from high temperature object to low temperature object.

B Compare between the following :

1. Rodents and lagomorphs according the number of incisors in each jaw.
2. Sodium element and gold according to chemical activity.

C A piece of iron has mass 78 grams and its volume 10 cm^3. Calculate its density ?

D Mention one example for the following :

1. Predacious plant.
2. A gas its molecule consists of two similar atoms.

Question 4

A Give reasons for the following :

1. "K" energy level is filled with electrons before "L" energy level.
2. The predatory birds have sharp and strong crocked beak.
3. Iron rod not copper are used in building houses concrete.
4. The atom is electrically neutral.
5. The electric heater is placed down on the ground of room.

B Choose the correct answer from the following :

1. A smell property is distinguishing factor between ....
   a. iron and copper. b. wood and plastic. c. perfume and vinegar.
2. From the animals that undergo aestivation is ....
   a. rat. b. jerboa. c. frog.
3. During festivals balloon is filled with .... gas.
   a. nitrogen b. hydrogen c. oxygen
4. The permanent source of energy is ....
   a. petroleum. b. electricity. c. the Sun.
5. From the plant that reproduce by forming spores ....
   a. pine. b. wheat. c. voughair.

C What would happen when ... ?

1. The horse and camel exchange their feet.
2. The electron requires a quantum of energy.